

Disparities Within Serious Mental Illness



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Disparities Within Serious Mental Illness

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None of the investigators have any affiliation or financial involvement that conflicts with the material presented in this report.

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Preface

The Agency for Healthcare Research and Quality (AHRQ), through its Evidence-based Practice Centers (EPCs), sponsors the development of evidence reports and technology assessments to assist public- and private-sector organizations in their efforts to improve the quality of health care in the United States. The reports and assessments provide organizations with comprehensive, science-based information on common, costly medical conditions and new health care technologies and strategies. The EPCs systematically review the relevant scientific literature on topics assigned to them by AHRQ and conduct additional analyses when appropriate prior to developing their reports and assessments.

This EPC evidence report is a Technical Brief. A Technical Brief is a rapid report, typically on an emerging medical technology, strategy or intervention. It provides an overview of key issues related to the intervention—for example, current indications, relevant patient populations and subgroups of interest, outcomes measured, and contextual factors that may affect decisions regarding the intervention. Although Technical Briefs generally focus on interventions for which there are limited published data and too few completed protocol-driven studies to support definitive conclusions, the decision to request a Technical Brief is not solely based on the availability of clinical studies. The goals of the Technical Brief are to provide an early objective description of the state of the science, a potential framework for assessing the applications and implications of the intervention, a summary of ongoing research, and information on future research needs. In particular, through the Technical Brief, AHRQ hopes to gain insight on the appropriate conceptual framework and critical issues that will inform future research.

AHRQ expects that the EPC evidence reports and technology assessments will inform individual health plans, providers, and purchasers as well as the health care system as a whole by providing important information to help improve health care quality.

If you have comments on this Technical Brief, they may be sent by mail to the Task Order Officer named below at: Agency for Healthcare Research and Quality, 5600 Fishers Lane Rockville, MD 20857, or by email to epc@ahrq.hhs.gov.

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Key Informants

In designing the study questions, the EPC consulted a panel of Key Informants who represent subject experts and end-users of research. Key Informant input can inform key issues related to the topic of the technical brief. Key Informants are not involved in the analysis of the evidence or the writing of the report. Therefore, in the end, study questions, design, methodological approaches and/or conclusions do not necessarily represent the views of individual Key Informants.

Key Informants must disclose any financial conflicts of interest greater than \$10,000 and any other relevant business or professional conflicts of interest. Because of their role as end-users, individuals with potential conflicts may be retained. The TOO and the EPC work to balance, manage, or mitigate any conflicts of interest.

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Disparities Within Serious Mental Illness

Structured Abstract

Background. Adults with serious mental illness (SMI) often experience gaps in access to needed health care compared with other populations. Such disparities may be even more pronounced between certain groups of patients with SMI, differing by race, ethnicity, gender, economic disadvantage (including housing stability) and socioeconomic status, and geographic location (chiefly, rural versus urban residence); disparities arise as well for individuals identifying as lesbian, gay, bisexual, and transgender (LGBT) and those who have difficulty communicating in English (because it is a second language).

Purpose. The primary goal of this Technical Brief is to describe and review the effectiveness of interventions that address disparities among adult patients with SMI in these important groups.

Methods. We reviewed the published and gray literature and interviewed Key Informants (KIs) to address four Guiding Questions (GQs). The four refined GQs for this Technical Brief focus on the critical areas of concern in relation to mental health treatment disparities—access to health insurance with appropriate coverage for these SMI conditions, accurate diagnostic evaluations, receipt of necessary and appropriate therapeutic services, quality of the health services, adherence to treatment over the long term, and various outcomes of care. The principal focus for the first three GQs is a description of the interventions (GQ 1), the context in which they are implemented (GQ 2), and a description of the evidence about the effectiveness of the interventions (GQ 3); GQ 4 presents conclusions, examines the gaps in the knowledge base, and identifies high-priority needs for future research. We include interventions addressing diagnosis, access to, and quality of treatment and support services among disparity groups of adults with SMI.

Findings. We identified 42 descriptive articles meeting inclusion criteria for GQs 1, 2, and 4, plus 37 articles measuring intervention effectiveness reporting on 26 unique studies (GQ 3). For GQ 1, the goals of each intervention were related to the specific diagnosis and disparity group that the intervention was targeting. Increased service use and treatment adherence were the most common intervention goals. For GQ 2, settings involved primarily mental health specialists being colocated in nonpsychiatric locations. These were usually primary care, but sometimes they were obstetrics-gynecology clinics, perinatal health care settings, and community mental health entities.

For GQ 3, most interventions tested adding enhanced services to usual available care, including culturally adapted collaborative care or other therapies, integrated services, case management and telemedicine. We found no studies of interventions for individuals identifying as LGBT or focusing only on English as a second language, addressing access to health care coverage, or addressing diagnostic accuracy. We found one study of the elderly, a group that can be predicted to have a larger number of physical comorbidities and difficulties obtaining necessary care because of their SMI.

Conclusions. Future research should identify interventions that are effective in reducing disparities all along the health care continuum and determine whether such interventions are

equally effective for particular groups within the SMI population. Many promising interventions focused on disadvantaged individuals, including homeless individuals and racial or ethnic minority disparity groups. Future research can include comparative findings between minority and majority group patients and subgroup analyses to evaluate effectiveness among different disparity groups.

Most interventions targeted depressive and psychotic disorders. The use of collaborative care, intensive case management approaches, such as the Critical Time Intervention (CTI) and Assertive Community Treatment (ACT), and specific culturally adapted therapies, including those involving families of individuals with SMI, were the most noticeable modifications to interventions, but were not widely applied across groups. Gaps persist both in terms of the diversity of disparity groups included in studies (particularly individuals who identify as LGBT and the elderly) and approaches considered.

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Background

Serious mental illness (SMI) commonly refers to a diagnosis of psychotic disorders, bipolar disorder, and either major depression with psychotic symptoms or treatment-resistant depression; SMI can also include anxiety disorders, eating disorders, and personality disorders, if the degree of functional impairment is severe.^{1,2} SMIs are long-term illnesses involving substantial functional impairment over multiple symptom domains. These impairments often lead to an inability to maintain gainful employment, poor social support, repeated psychiatric hospitalizations, homelessness, incarceration, and coexisting substance use disorders.

The prevalence of SMI and morbidity from these illnesses in the United States is striking. Rates of SMI for adults range from 4 percent to 6 percent, affecting more than 11 million adults.^{3,4} Furthermore, SMI is frequently under- or misdiagnosed or undertreated, and many people with an SMI receive no treatment at all. Among adults with an SMI in 2008, less than 60 percent had used mental health services in the previous year, and only 40 percent had used any outpatient health care services.⁵

Individuals with SMI often experience disparities in health care, specifically differences or gaps in care compared with patient populations with a mental health diagnosis but without a diagnosis of SMI.⁶ Such disparities may be even more pronounced in certain groups of patients with SMI. Such groups include minority race or ethnicity, gender, economic disadvantage (including housing instability and low socioeconomic status), and geographic location (chiefly rural residence); disparities arise as well for individuals identifying as lesbian, gay, bisexual, and transgender (LGBT) and those who have difficulty communicating in English (because it is a second language). We focus on these disparity groups in this report. In describing Hispanic or Latino individuals included in specific studies, we used the terminology favored by the study author.

Research has provided empirical support for variation in how patients from diverse ethnic and racial backgrounds interpret and define SMI.⁷ Studies have illustrated the complex and sometimes overlapping relationship among different groups in regard to disparities; for example, a study found that African-American and Hispanic SMI clients were less likely to travel as far for treatment as white patients.⁸ The Substance Abuse and Mental Health Services Administration (SAMHSA) recently published a report on racial and ethnic difference in mental health service use among adults, highlighting the persistence of disparities in SMI patients' access and receipt of such services; the report highlights findings such as the greater prevalence of inpatient mental health services among African-American adults (1.4 percent) compared with white adults (0.7 percent).⁹

Considering how to reduce these disparities effectively at each stage of care is crucial for optimizing care for patients with SMI who often have complex and chronic treatment needs. These differences or gaps in care between groups reflect inefficiencies in the health care system and can pose substantial economic burdens on the health care system as a whole.¹⁰

Although disparities in access to needed care exist between patient populations with and without SMI, the focus of this Technical Brief is limited to disparities among groups *within* the SMI population. For example, among Medicaid beneficiaries with schizophrenia, the quality of mental health care differs among white, African-American, and Hispanic or Latino patients. A measure of quality of care, incorporating indicators of pharmacological, psychosocial, and health services utilization, was lowest for African-American patients in all states and was lower for Latino than white patients in three of the four states sampled.¹¹ Appropriate use of atypical antipsychotics by veterans with schizophrenia differs by race.¹² Individuals who lived in rural

geographic areas had higher death rates from suicide than those who resided in large fringe metropolitan areas (suburbs) from 2008 to 2011, based on a 2013 National Health Care Disparities Report from the Agency for Healthcare Research and Quality (AHRQ).¹³ Research related to mental health care among individuals identifying as LGBT is limited, but gaining a greater understanding is important because this population experiences higher rates of mood and anxiety disorders and suicidal ideation and behavior.^{14,15}

This Technical Brief stems from important perceptions by clinicians, patients, and families that disparities can occur at multiple points along the health care continuum.¹⁶ Concerns include access to affordable health insurance that includes coverage for needed treatments; receiving accurate diagnosis of the SMI; receiving appropriate, standard-of-care therapies for the SMI as well as access to adequate health care generally; and adequate monitoring of the SMI through both short- and long-term followup.

The American Psychological Association highlights that lack of access to mental health care is quite pronounced in various racial groups.¹⁷ For example, research has found that barriers to care for ethnic minorities include a lack of insurance, distrust of care providers, and racism by providers.¹⁸ Moreover, disparities in the quality of care (both processes and end results of care) (i.e., differences in health care services available to SMI patients or in the outcomes of those services) are often related to racial, ethnic, geographic, and socioeconomic differences. A study comparing African-American with white inpatients in state psychiatric hospitals found a higher percentage of African-American inpatients diagnosed with schizophrenia.¹⁹ Other research has explored the contributory effects of setting in the over diagnosis of African-American patients.²⁰

Adherence to treatment over the long term and various outcomes of care, which can include, but would not be limited to, remission of the disorder, symptom relapse, physical health and functioning, broader quality-of-life domains, and satisfaction with care, are other points along the continuum of interest. Complicating this topic are a wide range of challenges that individuals with SMI may be facing: housing stability, social support, clinical engagement, criminal justice involvement, suicidality and other self-injurious behaviors, and homicide and other aggressive behaviors.

Although interventions have been studied to address these disparities along the health care continuum within the SMI population, findings describing their effectiveness (or comparative effectiveness) across studies have not been previously gathered in one report. The topic emerged from a priority listing developed through an Agency for Healthcare Research and Quality (AHRQ) Issues Exploration Forum that the RTI International–University of North Carolina Evidence-based Practice Center conducted early in the fourth round of AHRQ’s EPC program.²¹ An individual made the nomination of this topic on behalf of the National Alliance for Mental Illness, Urban Los Angeles Affiliate, via the Web as a followup to participation in the Issues Explorations Forum discussion. The nominator of this topic seeks to identify solutions to promote equal access to diagnosis and treatment and to improve the quality of care and outcomes for SMI patients, within the specified disparity groups.

Thus, the primary goal of this Technical Brief is to describe the literature addressing the effectiveness of interventions to reduce disparities among patients with SMI in these important groups. We aim to identify and summarize issues about interventions to reduce access and treatment disparities of the types noted above among specified groups with SMI. As a Technical Brief, however, this report does not attempt to be the definitive summary or synthesis of evidence on these matters, or interventions meant to address them, as one would expect in a full

systematic review report. Rather, it describes and maps the available evidence and clarifies the gaps in the knowledge base.

Guiding Questions

Technical Briefs are structured in terms of “guiding questions” (GQs) of interest to groups that nominate the topic to the Agency for Healthcare Research and Quality (AHRQ). They may be explored or refined in various ways (e.g., by interviews with representatives of critical stakeholder groups or formal procedures for exploring significant clinical or policy issues through panels and forums). The original GQs posed for this Technical Brief are in Appendix A.

The four refined GQs for this Technical Brief that are listed below focus on the critical areas of concern in relation to disparities—access to health insurance with appropriate coverage for these serious mental health (SMI) conditions, accurate diagnostic evaluations, receipt of necessary and appropriate therapeutic services, quality of the health services provided and received, adherence to treatment over the long term, and various outcomes of care. The principal focus for the first three GQs is a description of the interventions and the context in which they are implemented and tested (GQs 1 and 2), as well as a description of the evidence about the effectiveness of the interventions (GQ 3); GQ 4 examines the gaps in the knowledge base and the high-priority needs for future research.

The specific issues for the four GQs are the following:

1. From available evidence and input from Key Informants (KIs): Describe interventions (types or modalities) to reduce disparities among SMI groups. Interventions may address one or more of the concerns stated above. Primary subquestions include:
 - a. What are the goals, components, and outcomes of the interventions?
 - b. What are the disparity subgroups that are the focus of the interventions?
 - c. What are the potential advantages and disadvantages of these types of interventions?
2. From available evidence and input from KIs: Describe the context for each intervention (type or modality) identified in GQ 1 to reduce disparities among SMI groups. Key contextual subquestions concern the following:
 - a. What is the setting for the intervention?
 - b. What responsibilities do the health professionals (including clinicians) participating in the intervention have for the medical and mental health care of patients with SMI?
 - c. What resources (e.g., health information technology) are needed to provide the intervention?
3. From available evidence: Describe the current evidence about the effectiveness (or comparative effectiveness) of interventions that have been implemented to reduce disparities among SMI groups. Interventions may address one or more of any of the concerns identified for GQs 1 and 2. Data on a specific intervention will include but not be limited to:
 - a. patient inclusion criteria;
 - b. type of intervention and setting;
 - c. comparator intervention(s) used in comparative effectiveness evaluations, if any; and
 - d. outcomes.
4. From available evidence and input from KIs, identify gaps in knowledge and future research needs, with specific attention to the following subquestions:
 - a. Are any interventions to address disparities among SMI groups planned by researchers, clinicians, patient advocacy groups, or others, but not yet implemented?

- b. In current interventions, are the correct outcomes being measured? Are relevant outcomes being measured with appropriate instruments and data?
- c. What gaps exist in the evidence base for best practices or interventions for addressing disparities in SMI?
- d. What are possible areas of future research? What are potential long-term (10 years or more) developments in this field?

Methods

Systematic reviews require some certainty about how (1) interventions are defined and operationalized and (2) the body of studies to advance understanding of important issues is assembled and synthesized. Technical Briefs done for the Agency for Healthcare Research and Quality (AHRQ), in contrast, are generally more appropriate for emerging issues about health and health care interventions with major uncertainties about definitional issues and limited or no (published) evidence, precisely because they focus on uncertainties in definition, context, and outcomes. As such, the literature search in a Technical Brief could be considered as comprehensively seeking studies that would address its Guiding Questions (GQs), but not necessarily exhaustive, as one would expect from a systematic review. A Technical Brief does not rate the risk of bias of individual studies, synthesize data on outcomes, or grade the strength of the evidence of the literature. Rather, it provides an overview of key issues related to the intervention, such as current indications, relevant patient populations and groups of interest, outcomes measured, and contextual factors that may affect decisions regarding future interventions. Because Technical Briefs generally focus on interventions with limited published data or few completed studies, the goal is to provide an early and objective description of the state of the science, a potential conceptual framework, and insight on the critical issues that may inform future research.

For the four GQs specified above, we reviewed the published and gray literature, taking into consideration insights from Key Informants (KIs) concerning interventions and available evidence. We targeted our review of the literature to rely on the best and most recent evidence available to support GQ 3 (effectiveness of interventions). For GQ 3, our effectiveness question, we conducted a systematic search of the peer-reviewed and gray literature. We addressed GQs 1 and 2 primarily with information from the peer-reviewed and gray literature about interventions identified for GQ 3, while also considering related articles that supported GQs 1, 2, and 4. Across the GQs, the KI's discussions and peer reviewer input helped us identify additional relevant literature and key researchers. To answer GQs 1 and 2, we also considered articles that may be nonsystematic reviews, published descriptions of intervention protocols, or economic evaluations of interventions. When evidence from empirical studies was available, we first summarize that empirical evidence and then we reviewed findings from additional sources that would provide additional insights or context. Responses to GQ 4 were shaped by the peer-reviewed, published literature, gray literature, and discussions with KIs.

Literature Review

Published Literature Search

We systematically searched the published literature for studies to address GQs. An experienced research librarian developed our search strategy (Appendix B). We used the Federal government definition of serious mental illness (SMI) to identify studies of individuals meeting our inclusion criteria, that was included in the 1992 Alcohol, Drug Abuse, and Mental Health Services Administration Reorganization Act (P.L. 102-321). Through this Act, Congress directed the Secretary of Health and Human Services to develop a Federal definition of SMI: "Adults with a serious mental illness are persons: (1) age 18 and over, (2) who currently or at any time during the past year, (3) have a diagnosable mental, behavioral, or emotional disorder of sufficient duration to meet diagnostic criteria specified within the *Diagnostic and Statistical*

Manual of Mental Disorders (DSM)-III-R, (4) that has resulted in functional impairment which substantially interferes with or limits one or more major life activities. All of these disorders have episodic, recurrent, or persistent features; however, they vary in terms of severity and disabling effects.”²²

To accommodate the timing of the Alcohol, Drug Abuse, and Mental Health Services Administration Reorganization Act, as well as the *Diagnostic and Statistical Manual of Mental Disorders*, 3rd Edition (DSM-III) that was released in 1980, we systematically searched the published literature from January 1, 1980, through June 4, 2015. We searched in MEDLINE® via PubMed, the Cochrane Library, PsycINFO, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and ProQuest Psychology Journals.

To capture disparities, we used the MeSH headings of “Cultural Competency,” “Healthcare Disparities,” “Health Status Disparities,” “Minority Groups,” “Sexism,” “Discrimination (Psychology),” “Social Discrimination,” “Ageism,” “Racism,” “Rural Population,” “Socioeconomic Factors,” “Social Class,” “Sexual Behavior,” “Homeless Persons,” “African Americans,” “Homosexuality,” “Transgendered Persons,” “Hispanic Americans,” “Asian Americans,” and “Indians, North American.” We also reviewed the reference lists of relevant papers to identify any relevant citations that our electronic searches might have missed, and we examined any literature (identified by specific citation or author) suggested by KIs. We updated initial literature searches in August, 2015, concurrent with the peer-review process. We considered participants as members of a specific “racial and ethnic minority” group if individual studies defined them as such in describing their study populations.

Gray Literature Search

We searched the gray literature to identify information beyond what would be available the published literature on interventions to reduce disparities among groups of people with SMI. Sources for the gray literature included the following: OpenSIGLE, ClinicalTrials.gov, Academic Search Premier, and NIH RePORTER. We also searched Web sites of the National Guidelines Clearinghouse, the National Quality Measures Clearinghouse, and The Joint Commission. Appendix C briefly describes each of these gray literature sources.

Eligibility Criteria

We carefully considered how best to define our eligibility criteria to reflect the current state of the science describing interventions for reducing disparities in mental health care (GQs 1, 2, and 4) and to examine the current evidence base for the effectiveness of these interventions (GQ 3). We aimed to be more inclusive of individuals who would be considered as having SMI. Because of its breadth and to promote consistency in this research area, we used the previously published definition of SMI included in the AHRQ EPC technical brief concerning the measure development in serious mental illness.¹

SMI Diagnosis

Our basic population of interest was adults (≥ 18 years of age) with SMI currently or at any time during the past year. Based on the Federal definition of SMI stated above and on the request of the topic nominator, we defined SMI to include a clinical diagnosis of (1) schizophrenia or schizoaffective disorder (or other related primary psychotic disorder), (2) bipolar disorder, (3) current major depressive disorder, (4) anxiety disorders, (5) eating disorders, or

(6) personality disorders. The diagnoses should relate to the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV) or the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) equivalent (and subsequent revisions). We also included a clinical diagnoses of dysthymia among the SMI-eligible diagnoses to accommodate studies with mixed populations of individuals with major depressive disorder, dysthymia, or a combination of both diagnoses. Dysthymia can sometimes involve functional impairment that substantially interferes with or limits one or more major life activities, a key feature of SMI.

Disparity Groups

Given that many groups of people with SMI experience disparities in health care and outcomes, we focused this Technical Brief on particular groups of concern suggested by the nominator (and confirmed by the KIs) appearing in the available literature. Adults with SMI had to be a part of a group identified as being at risk of experiencing a mental health care disparity based on one or more of the following attributes: minority race or ethnicity; gender; low socioeconomic status (including homelessness); age (being elderly); geographic location (residing in a rural area); identifying as lesbian, gay, bisexual, and/or transgender (LGBT); or having difficulties communicating in English (English as a second language).

For studies included in this report, terminology used to refer to individuals identifying as LGBT and the various racial and ethnic groups is consistent with the source publication whenever possible.

The literature commonly identified homeless individuals by self-reports of living on the streets or in a homeless or similar type of shelter or temporary accommodations for a specific amount of time. Some studies specifically used the definition from the National Institute of Mental Health²³ to define their homeless populations. We also considered these study populations as homeless.

We initially considered the elderly population to be 65 years of age or older, but because we found a paucity of studies meeting this restriction, we also considered studies as focusing on the elderly if the majority of individuals were within the specified age range and investigators considered their study populations as elderly.

Interventions

We included interventions intended to reduce various disparities in care and outcomes of care among these groups of adults with SMI by, at the least, focusing on specific disparity group patients. Health outcomes included, but were not limited to, the following: mental health outcomes, housing stability among the homeless group, physical health outcomes, quality of life, and satisfaction with care. To help ensure that we evaluated health care disparities at all points along the health care continuum, we broadly included articles in which the setting was inpatient or outpatient and in which clinicians and support staff provided primary care, mental health (specialty) care, or both. We excluded articles about studies conducted outside the United States or not published in English to maximize the likelihood of generalizability to our topic nominators' populations of interest and relevant treatment settings.

Study Design

We developed slightly different criteria for our two sets of questions: GQs 1, 2, and 4 as one set and GQ 3 as the other. For GQs 1, 2, and 4, to ensure that we captured the spectrum of

current thinking and evidence on reducing disparities, we applied no study design restrictions. We anticipated that relevant information might come from a variety of publications, including review articles, qualitative research, feasibility studies, study protocols, and opinion pieces. We did not require articles to report on outcomes for these GQs.

For GQ 3, we applied stricter criteria for our review of the evidence on the effectiveness of interventions to reduce health care disparities. Articles were required to report on outcomes related to interventions to reduce health care disparities. We excluded articles if the study designs were case reports or case series; cross-sectional studies; nonsystematic reviews; or commentaries, opinions, or letters to the editor with no primary data.

Literature Dual Review Process

Trained members of the research team dually reviewed all abstracts for eligibility based on the preestablished inclusion/exclusion criteria presented in Table 1. Inclusion/exclusion criteria are organized in terms of PICOTS (populations, interventions, comparators, outcomes, time frames, and settings) as well as study design, language, and publication date. Any study with inadequate information in the abstract or marked for possible inclusion by at least one reviewer underwent full-text review. We retrieved and dually reviewed the full text of all articles included during the title/abstract review phase. Trained members of the research team dually reviewed each full-text article for inclusion or exclusion on the basis of the eligibility criteria presented in Table 1. Reasons for exclusion were documented and articles marked for inclusion were tagged for the relevant GQ(s) that the article addressed. Disagreements about inclusion (i.e., one reviewer included and one reviewer excluded the article) were resolved by discussion or consensus with review by the research team as needed.

Table 1. Selection criteria for relevant interventions to reduce disparities for groups of patients with SMI^a

Criterion	Inclusion	Exclusion
Population	<p>All GQs</p> <p>≥18 years with SMI currently or at any time during the past year</p> <p>AND</p> <p>Part of a group identified as being at risk of experiencing a mental health care disparity based on minority race or ethnicity, gender, low socioeconomic status (including homelessness), geographic location (rural residence), identifying as LGBT, being elderly, or difficulty communicating in the local primary language (e.g., English as a second language)</p>	<p>All GQs</p> <p><18 years</p> <p>Primary diagnosis of substance abuse, dementia, or mental retardation</p>
Intervention	<p>All GQs</p> <p>Interventions intended to reduce disparities among groups of individuals with SMI, including disparities in (1) access to accurate diagnostic evaluation; (2) access to health care, including health care coverage; (3) quality of health care; or (4) adherence to treatment, response to treatment, or health outcomes</p>	<p>All GQs</p> <p>Approaches that do not attempt to reduce these disparities</p>

Table 1. Selection criteria for relevant interventions to reduce disparities for groups of patients with SMI (continued)

Criterion	Inclusion	Exclusion
Comparator	GQs 1, 2, and 4	GQs 1, 2, and 4
	No limitations	Not applicable
	GQ 3	GQ 3
	Another intervention to reduce the same disparity in the same outcome(s)	Studies with no comparator group except for single group pre-post studies
	Usual care/active control	
	Waitlist/placebo	
	No comparator for single group pre-post studies	
Outcomes	GQs 1, 2, and 4	GQs 1, 2, and 4
	No limitations	Not applicable
	GQ 3	GQ 3
	Benefits, including improvements among disparity group members in (1) access to health insurance with appropriate coverage for these conditions; (2) access to accurate diagnostic evaluations; (3) access to necessary and appropriate therapeutic services; (4) quality of health services received; (5) adherence to treatment; and (6) other outcomes of care, which can include, but would not be limited to: remission of disorder, symptom relapse, physical health and functioning, broader quality of life domains (including housing stability), and satisfaction with care.	Outcomes not attributable to the interventions of interest
	Harms or adverse effects of using these interventions	
Time frames	All GQs	All GQs
	No limitations	None
Setting	All GQs	All GQs
	Inpatient or outpatient	No setting described in the study
	Primary care or mental health (specialty) care	Non-United States
	United States	
Study design	GQs 1, 2, and 4	GQs 1, 2, and 4
	No limitations	None
	GQ 3	GQ 3
	Systematic reviews	Case reports
	Randomized controlled trials	Case series
	Nonrandomized controlled trials	Cross-sectional studies
	Prospective and retrospective cohort studies	Opinions
	Case-control studies	Commentaries
	Single-group pre-post studies	Nonsystematic reviews
		Letters to the editor with no primary data

Table 1. Selection criteria for relevant interventions to reduce disparities for groups of patients with SMI (continued)

Criterion	Inclusion	Exclusion
Other	All GQs	All GQs
	English language	Non-English language
	Published 1980 and later	Published prior to 1980

^a SMI defined as (1) schizophrenia or schizoaffective disorder (or other related primary psychotic disorder), (2) bipolar disorder, (3) depression, (4) anxiety disorders, (5) eating disorders, or (6) personality disorders, per DSM-IV (*Diagnostic and Statistical Manual of Mental Disorders*, 4th Edition) or their ICD-9-CM (International Classification of Diseases, Ninth Revision, Clinical Modification) equivalent (and subsequent revisions).

GQ = Guiding Question; LGBT = lesbian, gay, bisexual, transgender; SMI = serious mental illness.

Discussions With KIs

KIs provide context to empirical findings (or lack of them) and may raise new concerns that prompt additional literature searches. KIs were particularly vital to shaping this Technical Brief because of their contributions to the myriad conceptual frameworks related to interventions for reducing health care disparities among SMI groups. Distinguishing commonalities or differences in how studies defined disparities or SMI (or both) was expected to be particularly challenging.

In consultation with our team and AHRQ staff, we identified distinct perspectives that we needed to develop a well-rounded and balanced Technical Brief on interventions for reducing health care disparities among groups of people with SMI. Specifically, we recruited six KIs representing a spectrum of expertise and stakeholder interests: mental health providers and representatives of professional societies (four KIs), patient advocacy groups (one KI), and Federal policymakers (one KI). Some KIs represented multiple fields of expertise and provided insights into the issues the SMI population faces. More detail about the KI process is available in Appendix D.

We interviewed KIs through telephone calls, having shared our preliminary GQs and other materials with them before the calls. An experienced moderator led the calls following a semistructured guide with built-in places for obtaining input from the KIs. We used insights from KIs to confirm the findings from our literature review and the scope of our eventual Technical Brief. We began each KI interview with introductory questions that addressed definitional aspects of this Technical Brief, namely how the KI would define “disparities” and “usual care” for disparate groups. We asked the KIs what the important disparate groups were within a broader SMI patient population. Following that discussion, we focused on the preliminary GQs related to interventions to reduce disparities among the groups of interest, using the subquestions for each GQ as prompts to discuss issues further.

Data Management and Abstraction

We collected information from discussions with KIs, comprehensive searches of the peer-reviewed literature, and targeted searches of the gray literature. All literature screening results were tracked in an EndNote database. We recorded the reason that each excluded full-text publication did not satisfy the eligibility criteria (Appendix E). We abstracted data from each study that met our inclusion criteria for GQ 3, using a standardized template. One member of the review team recorded the data, and a second team member reviewed those data in the template for accuracy and completeness. The following information was obtained from each study, where applicable: author, year of publication, source of study funding, study design characteristics,

study population (including study inclusion and exclusion criteria), the group(s) of interest, the primary SMI diagnosis, interventions to reduce disparities, duration of patient followup, outcomes assessed (specific measures used and timing of assessment), and other pertinent information.

Peer Review and Public Comment

The draft Technical Brief was available for peer review and public comment at www.effectivehealthcare.ahrq.gov from July 31 to September 8, 2015. Six peer reviewers provided feedback on the draft; no individuals or organizations offered public comment. We revised the Brief in response to these comments where appropriate.

Findings

In this section, we first summarize key themes and findings across serious mental illness (SMI) diagnoses, disparity groups, and intervention types to answer Guiding Questions (GQs) 1 and 2. We then look at very broad characteristics of the interventions we reviewed, including the intervention's general goals, components, settings, and needed resources. We also include the context our Key Informants (KIs) provided.

In the GQ 3 findings section, we provide a more detailed summary of the 26 studies (reported in 37 publications) we identified that met our inclusion criteria of having evaluated the effectiveness or comparative effectiveness of interventions to improve outcomes in patients with SMI in one or more of the specified disparity groups. In this section, we summarize these studies in the context of the disparity group that they targeted.

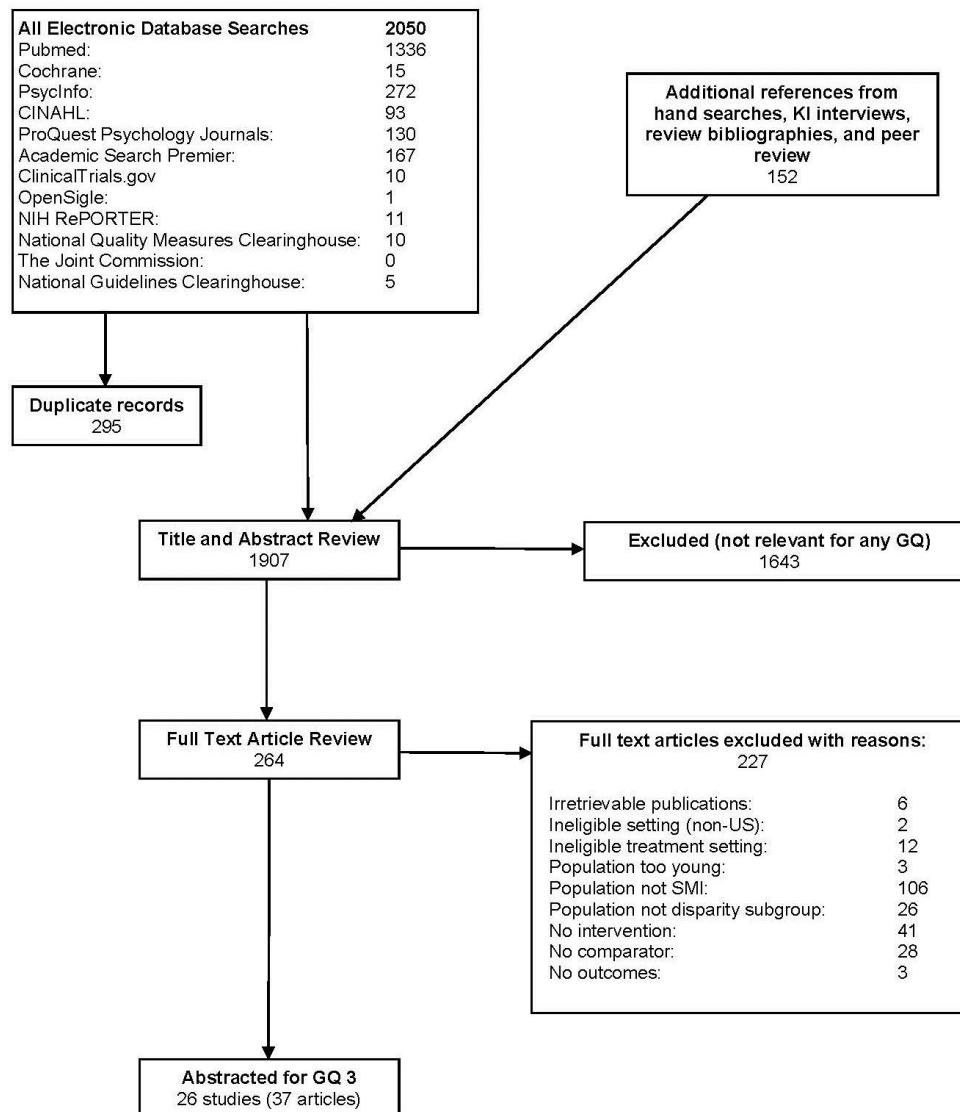
As previously noted, although many groups of adults with SMI of various types may experience disparities in health care and outcomes, specifically selected patient populations are the focus of this Technical Brief. Therefore, we present the findings about interventions focusing on these commonly identified disparity groups, as available in the literature and suggested by the topic nominator. The groups are categorized based on the following characteristics:

- race or ethnicity (or both);
- gender;
- lower socioeconomic status (SES);
- homelessness;
- age, specifically being elderly;
- geographic location (e.g., geographic isolation from needed treatment because of rural residence);
- identifying as lesbian, gay, bisexual, and/or transgender (LGBT); and
- having difficulty communicating in English (when the person has a different primary language and for whom English is a second language).

Some studies include participants who could be categorized in more than one group. In reporting results in response to GQ 3, we assigned studies to one group largely according to the description of the main target or intent of the intervention as described by the investigators and mapped to the groups of specific interest for this Technical Brief. For example, if an intervention primarily sought to assess the efficacy of an intervention in an elderly population but was limited to individuals of low socioeconomic status (SES) or to certain racial/ethnic minority groups, or compared results across these groups, we categorized the study in the elderly disparity group because the authors focused on this as the intervention's primary population of concern.

Figure 1 illustrates the yield of our literature search at the various review stages. We identified and reviewed 1,906 titles and abstracts and, of these, 263 full-text articles. Based on this process, we identified 26 distinct studies in 37 articles from which we extracted data for GQ 3 that met our inclusion criteria and addressed the effectiveness of interventions to reduce disparities among SMI groups. Because the searches for GQs 1, 2, and 4 were broader than for GQ 3, also including studies describing interventions, contextual considerations, and research gaps and directions, we included 42 additional articles for GQs 1, 2, and 4 that are appropriate for these GQs but not for GQ 3. These articles are described and cited at the discretion of the authors where appropriate.

Figure 1. Flow chart of search yield and GQ 3 included studies

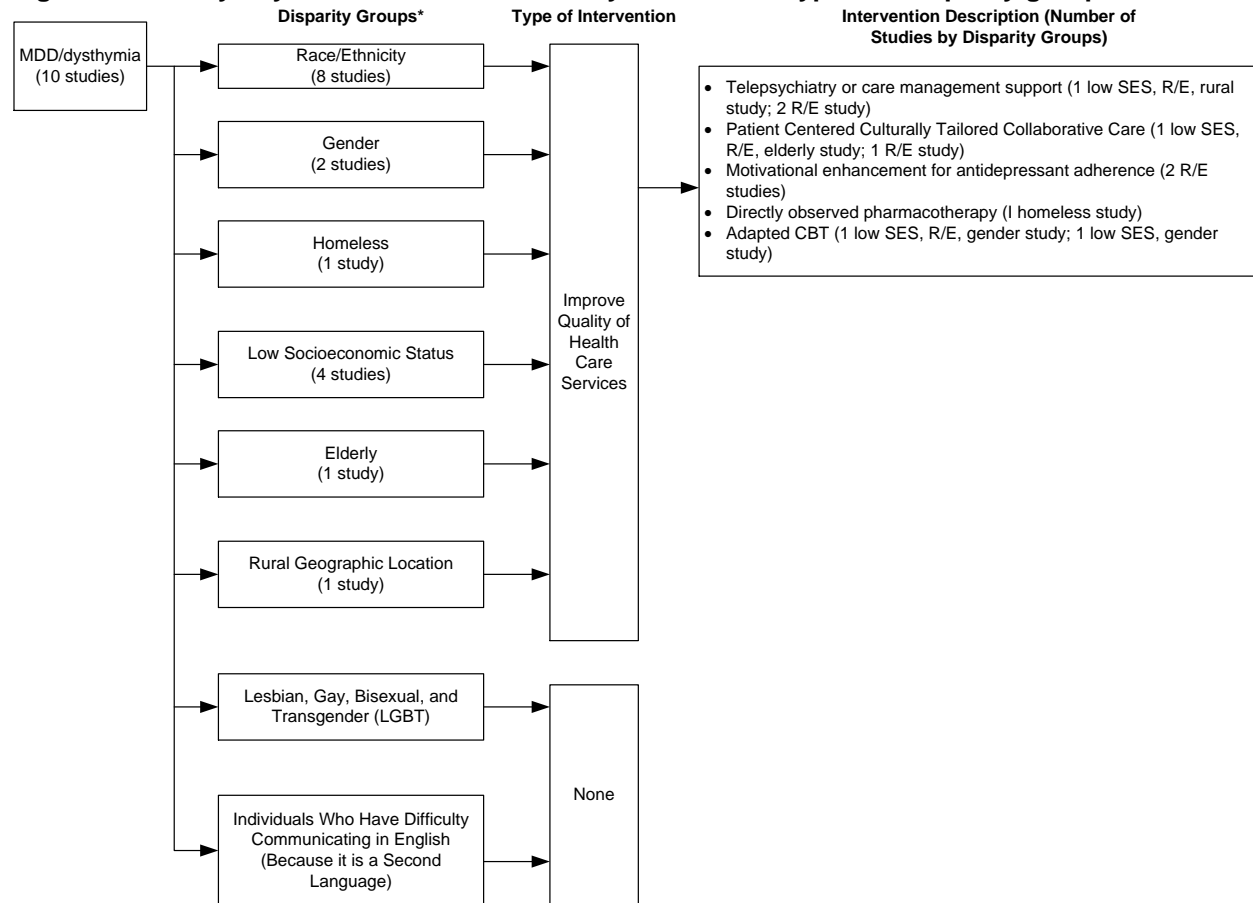


GQ = Guiding Question; SMI = serious mental illness.

Figures 2 through 5 describe the number of studies for each disparity group by type of intervention, within one of the four diagnosis categories: (1) major depressive disorder (MDD), (2) schizophrenia or schizoaffective disorder, (3) posttraumatic stress disorder (PTSD), and (4) a combination of diagnoses or the specific SMI diagnosis of the population not specified in the study. These figures are limited to the interventions included in the GQ 3 literature. For patients with MDD or dysthymia, the most prevalent intervention type was some form of psychological or behavioral therapy (includes group, family, individual, cognitive behavioral therapy [CBT]) and the least common was pharmacotherapy. The racial or ethnic minority group was the most studied disparity group under this diagnosis. For those with a schizophrenia diagnosis, varying modalities of care management was the most commonly included intervention type. Similar to the MDD or dysthymia diagnosis, racial or ethnic minority groups were the most often studied under this diagnosis. Studies of interventions for the homeless included, more commonly than

for other groups, participant populations with a combination of diagnoses—or, the studies did not report the specific SMI and included the greatest diversity of intervention types being tested.

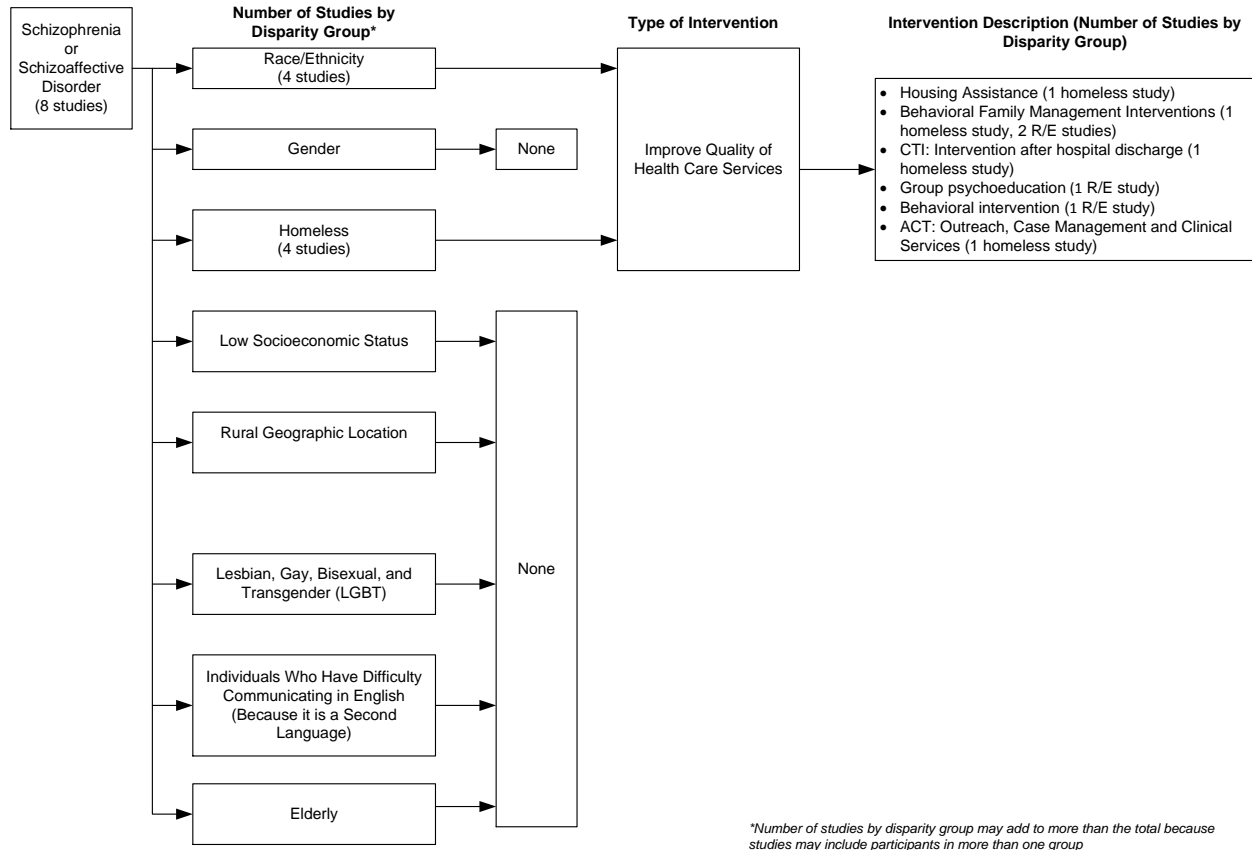
Figure 2. MDD/Dysthymia: Number of studies by intervention type and disparity group



**Number of studies by intervention includes overlap across the disparities subgroups*

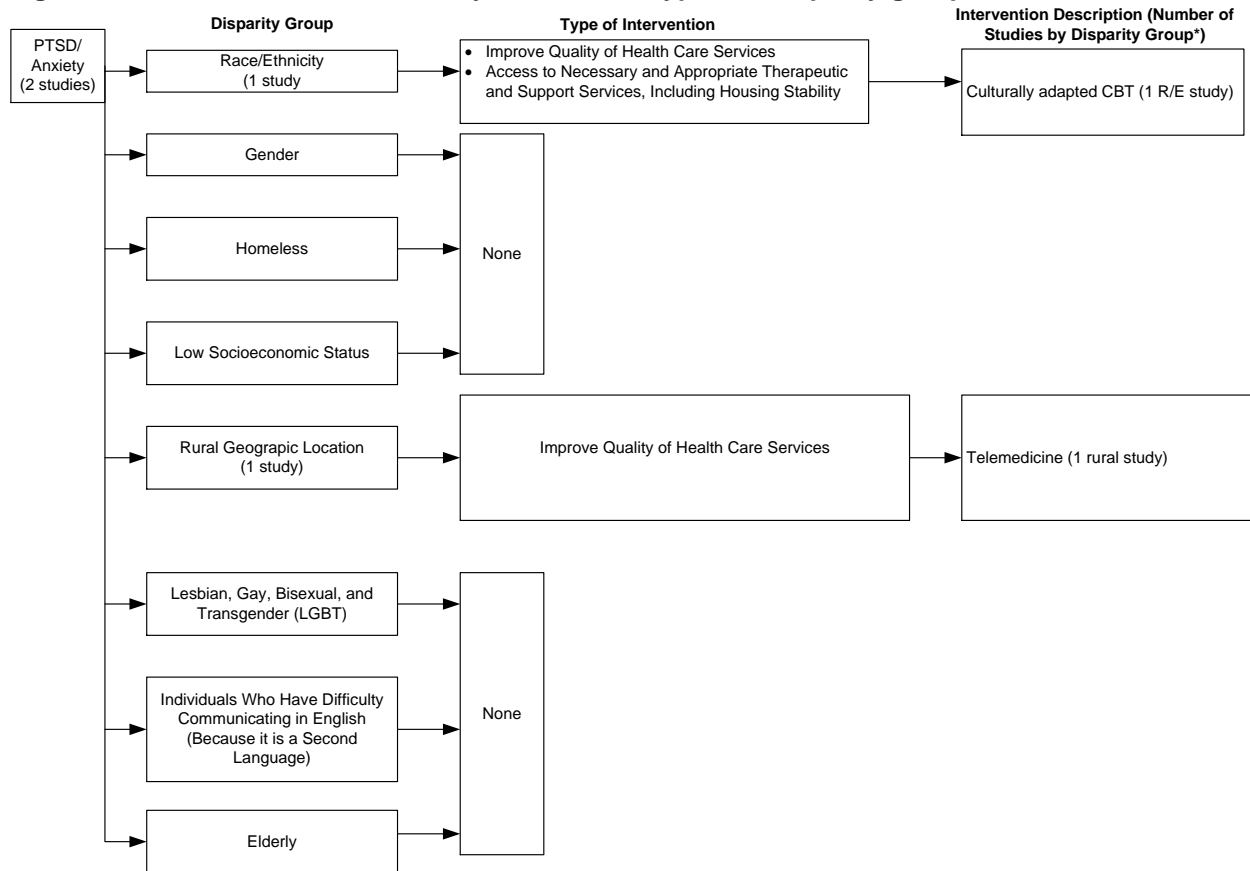
LGBT = lesbian, gay, bisexual, and transgender; MDD = major depressive disorder; R/E = racial/ethnic; SES = socioeconomic status.

Figure 3. Schizophrenia or schizoaffective disorder: Number of studies by intervention type and disparity group



ACT = Assertive Community Treatment; LGBT = lesbian, gay, bisexual, and transgender; R/E = racial/ethnic; SES = socioeconomic status.

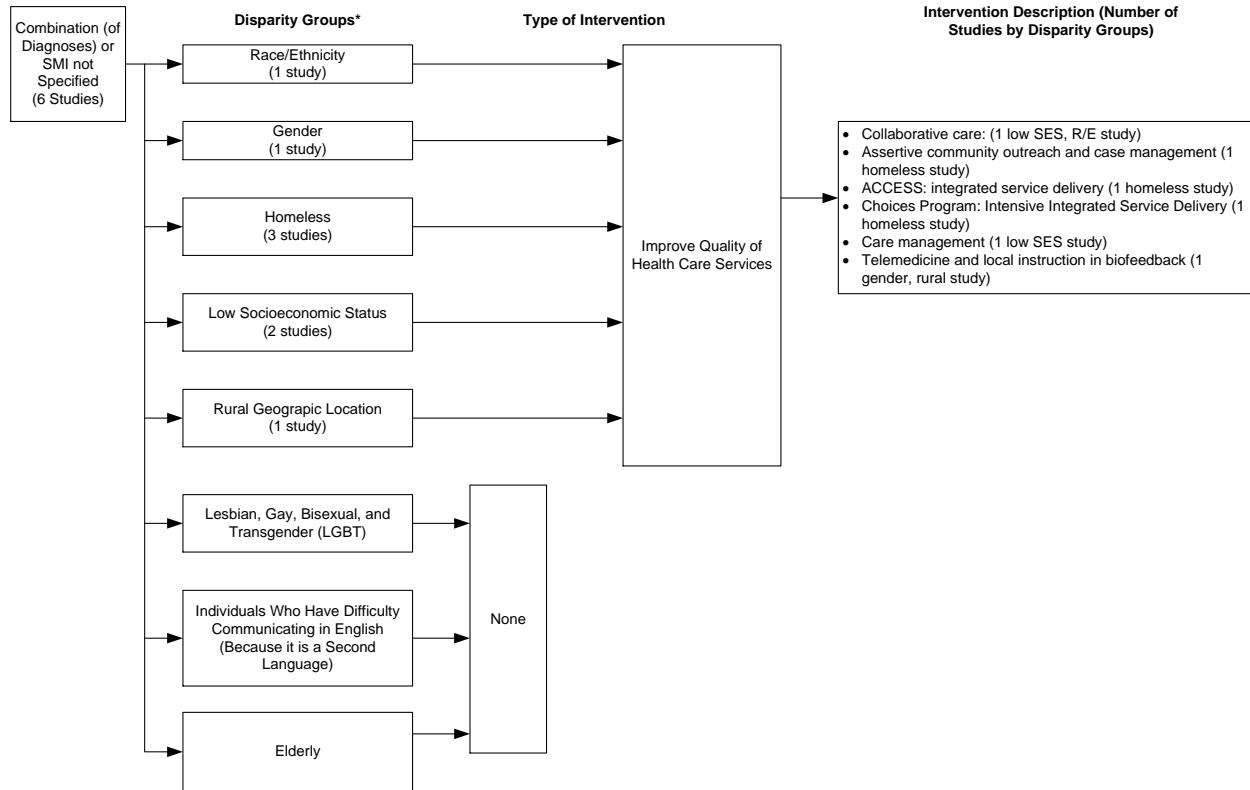
Figure 4. PTSD: Number of studies by intervention type and disparity group



**Number of studies by intervention includes overlap across the disparities subgroups*

LGBT = lesbian, gay, bisexual, and transgender; PTSD = posttraumatic stress disorder; R/E = racial/ethnic; SES = socioeconomic status.

Figure 5. Combination of diagnoses or specific SMI diagnosis: Number of studies by intervention type and disparity group



*Number of studies by intervention includes overlap across the disparities subgroups

ACCESS = Access to Community Care and Effective Services and Supports; LGBT = lesbian, gay, bisexual, and transgender; R/E = racial/ethnic; SES = socioeconomic status; SMI = serious mental illness.

Table 2 displays intervention types by diagnoses, disparity groups, and position along the health care continuum. The table highlights that improving the quality of health care services was the focus of most interventions across diagnoses. The largest number of interventions was provided to individuals in racial or ethnic minority disparity groups, followed by the number focusing on the homeless and then the low SES disparity group. Individuals identifying as LGBT and those who have difficulty communicating in English (because it is a second language) were the least studied disparity groups across all intervention types and diagnoses. We provide additional detail about the interventions and the disparity groups they focus on later in the Guiding Question 3 section.

Table 2. Summary of interventions by diagnosis and disparity group

Diagnosis	Intervention	Health Care Continuum	Low SES, Including Homeless	Racial or Ethnic Minority	Elderly	Geographic Isolation (Rural)	Gender
MDD or dysthymia	Telepsychiatry ²⁴	Access to health care	X	X		X	
	Collaborative care (Primary care based) ^{25,26}	Receipt of quality treatments	X	X	X		
	Collaborative care (Patient-centered, culturally tailored) ²⁷	Receipt of quality treatments		X			
	Culturally adapted therapy (including individual, group and family) ^{28,29}	Access to other health-sustaining services		X			
	Culturally adapted therapy (including individual, group and family) ^{30,31}	Receipt of quality treatments	X	X			X
	Telepsychiatry ³²	Receipt of health care		X			
	Culturally adapted therapy (including individual, group and family) ³³	Access to other health-sustaining services	X				X
	Directly observed therapy (DOT) ³⁴	Receipt of quality treatments	X				

Table 2. Summary of interventions by diagnosis and disparity group (continued)

Diagnosis	Intervention	Health Care Continuum Outcome	Low SES, Including Homeless	Racial or Ethnic Minority	Elderly	Geographic Isolation (Rural)	Gender
Schizophrenia or affective disorder	Case Management (CTI) ³⁵⁻⁴²	Receipt of quality treatments	X				
	Case management ⁴³	Access to other health-sustaining services	X				
	Culturally adapted therapy (including individual, group and family) ⁴⁴	Receipt of quality treatments		X			
	Culturally adapted therapy (including individual, group and family) ⁴⁵	Access to other health-sustaining services		X			
	Culturally adapted therapy (including individual, group and family) ⁴⁶	Receipt of quality treatments		X			
	Culturally adapted therapy (including individual, group and family) ⁴⁷	Receipt of quality treatments		X			
	Culturally adapted therapy (including individual, group and family) ⁴⁸	Access to health care	X				
PTSD	Telepsychiatry ⁴⁹	Access to health care				X	

Table 2. Summary of interventions by diagnosis and disparity group (continued)

Diagnosis	Intervention	Health Care Continuum Outcome	Low SES, Including Homeless	Racial or Ethnic Minority	Elderly	Geographic Isolation (Rural)	Gender
Combination or Diagnosis not specified	integrated service delivery (ACCESS) ⁵⁰⁻⁵³	Access to health care	X				
	Case management ⁵⁴	Access to health care	X				
	Case management ⁵⁵	Receipt of quality treatments	X				
	Culturally adapted therapy (including individual, group and family) ⁵⁶	Receipt of quality treatments		X			
	Telepsychiatry ⁵⁷	Access to health care				X	X
	Collaborative care ⁵⁸	Receipt of quality treatments	X				
	Collaborative care ⁵⁹	Receipt of quality treatments	X	X			

ACCESS = Access to Community Care and Effective Services and Supports; ACT = Assertive Community Treatment; CTI = Critical Time Intervention; DOT = directly observed therapy; MDD = major depressive disorder; PTSD = posttraumatic stress disorder; SES = socioeconomic status.

We list and briefly describe below some of the more noteworthy interventions we identified within and across the disparity groups, but more detail on these and other interventions can be found in the Guiding Question 3 section later in the report.

- Critical Time Intervention (CTI) provides an array of services to patients recently discharged from inpatient psychiatric hospitalizations.
- Choices is an intensive case management and support program of outreach and engagement to foster relationship with staff.
- The Assertive Community Treatment (ACT) program was an evidence-based multidisciplinary intensive community treatment program for individuals with SMI and comorbid homelessness, frequent hospitalization, substance abuse, and criminal justice involvement.
- The ACCESS Program aimed to improve outcomes through enhancing system integration.
- Primary Care Access, Referral, and Evaluation (PCARE) includes manualized care management provided by nurses to address patient, system, and provider barriers to primary care.
- Blacks Receiving Interventions for Depression and Gaining Empowerment includes a patient-centered, culturally tailored collaborative care strategy delivered by primary care providers.
- Motivational Enhancement Therapy for Antidepressants (META) included individual sessions to improve medication adherence in addition to usual care.

Guiding Question 1: Description of Interventions to Reduce Disparities Among SMI Groups

Key Findings

This section answers GQ 1, describing and summarizing the goals, components, outcomes, advantages, and disadvantages of interventions to reduce disparities. The goals of specific interventions were related to the specific diagnosis and disparity group that the intervention was targeting. Commonly, interventions included multiprovider service components or enhanced service delivery modalities. Increased service use and treatment adherence were the most common intervention outcomes. For interventions targeting the homeless, increased housing stability was an important outcome.

Intervention Goals, Components, and Outcomes

Intervention Goals and Outcomes

The goals of most study interventions included improving access to mental health services, reducing depressive symptoms, increasing treatment adherence, and improving quality of life.^{27-29,32,43-46,48,50,57,59-64} A specific goal of all the interventions for the homeless population was increasing housing stability. We identified four telepsychiatry studies.^{24,32,49,57} In one study, investigators found that collaborative care through a telemedicine service was acceptable to the low SES and Hispanic disparity groups, although within the study, they were not able to conclusively demonstrate the intervention's feasibility and effectiveness.²⁴

Outcomes for interventions included improving the trends in service utilization patterns (e.g., decreased visits to emergency departments, increased access to outpatient services) and enhancing housing stability (e.g., decreased number of days on the street or in a shelter).^{31,34,39,40,48,54,65,66} Intervention outcomes also included the reduction in depression severity, increase in quality of life, and enhanced access and delivery of psychiatric services.

Intervention Components

Researchers tailored intervention designs to meet the unique needs of the disparity group. Intervention components for homeless populations included integration of services, multicare team structures, and street outreach and followup.^{42,48,50,63,67-69} The predominance of multicare teams as an intervention focus reflected a need for a breadth of skills and associated qualifications among staff. Staff types included outreach workers, clinical case managers, psychiatrists, primary care providers, and psychiatric nurses; the outreach worker was consistently reported across studies as a required staffing component for the program to reach the homeless population effectively.^{31,34,48,52}

KIs highlighted other alternative service delivery options as components of the interventions that could improve effectiveness across various disparity groups. These approaches included (1) enhancing service integration such as using virtual health homes in conjunction with a health outreach worker doing illness self-management training and support or (2) using virtual health homes plus automatic teller assistance (using technology to create a kind of robotic in-home support). One KI noted that a team at Dartmouth is working on mobile health technology for measuring the mental health of patients called “Common Ground,” a Web-based computer program based on self-management that features video testimonials, and allows the patient to select a testimonial from someone they can identify with on the basis of ethnicity or some other characteristic.

We also identified appropriate staff qualifications as another component in the various studies, especially interventions targeting racial and ethnic minority disparity groups. Staff qualifications required for case management and integrated service interventions targeting racial and ethnic populations included primary care providers, psychiatric nurses, psychiatrists, and lay health workers who were familiar to and trusted by the study population, including those who spoke the patient’s primary language.

Other important intervention components included algorithm-based recommendations to physicians and case managers to improve the quality of care⁶⁰ and prepsychoeducational sessions before the delivery of services.⁶¹ Similar to interventions for the homeless population, the components of interventions for the elderly also included integrative service teams and resources (primary care, case management, monitoring and tracking systems) to address the multifaceted needs of this population.^{25,70}

Interventions studied involved a variety of service delivery options. These included use of offsite mental health professionals to provide on-site primary health care providers with decision support for medication or psychotherapy (or both) or patient therapy through a “tele-psychologist”⁴⁹; the latter can support on-site mental health services or provide individual or group-based psychotherapy through a telemedicine link.⁵⁷

KIs noted that rural residents with SMI are a rapidly growing disparity population. They expressed that using technology to provide services for this population has great potential, especially telemedicine or telepsychiatry. Additionally, technology based on machines that learn by collecting information from patients and incorporating responses into decisionmaking offer

considerable promise. Mobile health technology is another key area that is now increasingly being tapped as a way to better assess and monitor patients in real time.

Disparity Groups

Interventions targeting racial and ethnic minority groups were most prevalent, followed by those targeting low SES including homelessness. Interventions for the elderly appeared primarily in studies of racial and ethnic groups. We did not identify any studies that focused on interventions targeting individuals identifying as LGBT or American Indian/Alaska Natives (race or ethnicity) disparity groups.

We found that researchers included patients who are members of multiple disparity group categories within individual interventions. For example, the geographic disparities group, which focused on rural populations in our studies, was captured primarily in discussions of other disparity groups, because of the overlap with other characteristics. For example, one study examined collaborative care intervention across the elderly, racial or ethnic, and low SES disparity groups.^{25,26}

Two studies,^{57,71} however, looked at geographic location independent of any other group characteristics; both found that telemedicine approaches were acceptable to the targeted populations. KIs reinforced the importance of interventions focused on increasing access to accurate diagnoses in rural areas given the dearth of psychiatrists and behavioral health professionals in those regions.

Potential Advantages and Disadvantages

We found that interventions described in the available literature or by KIs have two main advantages: (1) they address the unique needs of the disparity group by integrating specifically identified services, clinical care models, or resources and (2) they seek to build on existing treatment modalities. KIs believed that collaborative care is the only intervention for which more than minimum evidence exists for reducing disparities and improving engagement. This view aligns with positive research findings on this intervention.⁷² We found that many of the interventions had a collaborative care base,^{25-27,58,59} with components modified to be specific to the disparity population of interest.

We did not identify any studies that addressed either potential disadvantages of any of the interventions or issues of safety or harm. KIs did not directly address this issue.

Guiding Question 2: Context of Interventions to Reduce Disparities Among SMI Groups

Key Findings

This section describes contextual issues associated with these interventions; of specific interest were intervention settings, organization and staff characteristics, and resources and other requirements for successful implementation. Most evidence was identified in the existing literature; we indicate where KIs specifically noted relevant issues.

The homeless population and racial and ethnic minorities have been the targets of most of this research. Settings involved primarily mental health specialists being colocated in nonpsychiatric locations. These settings were usually primary care, but sometimes they were obstetrics-gynecology clinics and perinatal health care settings; settings also included community

mental health entities, although other community-based settings or in-home locations were described.

Use of, and thus research on, mobile health and Internet technology are increasing (for all populations and health care purposes). Many of the interventions for disparity groups (e.g., ACT teams and CTI for the homeless, colocation of mental health specialists for minorities or the elderly, telemedicine for rural areas) require giving additional responsibilities to existing health care clinicians and adding new personnel and new resources (e.g., mobile health technology). Homeless populations, racial and ethnic minorities, the elderly, and rural populations have all been included in this research, but what is needed for successful implementation across groups remains unclear.

Intervention Settings

Interventions to reduce the various disparities of the groups of interest were set in multiple locations, each of which increased the likelihood of capturing patients. The settings included public agencies in urban areas that involved contract service delivery programs⁴³ and, specific to the homeless disparity group, community mental health clinics that provided both in-home service and services for the homeless through ACT teams,⁴⁸ homeless shelters,⁴² or institutions.^{35,39}

Other settings included community mental health clinics;^{24,44,47,56} primary care clinics with no integration of mental health specialists,³² some integration of mental health specialists,^{27,59-61,73} and primary care clinics with some description of this integration occurring within a patient-centered medical home;⁶⁸ obstetric-gynecologic clinics,^{33,74} and family planning or pediatric-related services.³¹

Some interventions to reduce disparities among patients with SMI focused on enhancements in primary care settings. These studies illustrate situations in which mental health specialists have been colocated through collaborative care interventions. This approach can offer an infrastructure to support ongoing monitoring and management of medication or psychotherapy treatment.^{25,26} Interventions in primary care can also provide peer-led collaborative activation programs to improve “patient activation” and person-centered care of older adults with SMI and cardiovascular risk.⁷⁰

In looking at the intervention settings for the homeless population, researchers focused primarily on patients with psychotic disorders. The aim was to help create a bridge to follow up with community mental health providers by, for instance, providing a CTI program for SMI populations or directly observed pharmacotherapy (DOT) in HIV clinics trying to improve depression care.³⁴ Each of the interventions was an outreach from community mental health clinics, although the DOT in HIV clinics was delivered at a specific research site (not a formal clinic).

Interventions to reduce disparities in rural populations address the difficulties created by patients living in areas with limited access to specialty mental health providers (if not even basic primary or specialty medical care professionals). Settings studied included community-based outpatient clinics of the Department of Veterans Affairs.^{49,57,71} One limited research demonstration was conducted in an in-home treatment setting.⁷⁵

KIs were generally in agreement that the settings described in the literature, which were primarily public-sector mental health settings, were the correct ones to target. They also indicated that the criminal justice setting, whether by diversion of homeless patients or because released mentally ill inmates are at increased risk of becoming homeless, can be important for

better reaching SMI patients who are (or may become) homeless. Programs such as the Consensus Project (<http://csgjusticecenter.org/mental-health-projects/report-of-the-consensus-project>) can provide information on the implementation of practical, flexible mental health strategies in criminal justice environments such as on-site technical assistance and dissemination of information about programs, research, and policy developments in the field.

Additional Responsibilities of Health Professionals for Medical and Mental Health Care

By Intervention Type

Additional responsibilities for health professionals to enhance care vary by intervention type. Some add no clear burden to health professionals by virtue of their emphasis on public service agencies, whereas others put increasing degrees of burden on health care providers. All require additional resources, primarily an additional case manager or clinical personnel and effort.

The Los Angeles Homeless Opportunity Providing Employment (LA's HOPE), for example, placed various responsibilities on public health agencies and their contract service delivery programs.⁴³ Some intervention models, such as the ACCESS Program,^{62,76} gave more responsibilities to case managers who provide intensive case management with outreach in an attempt to more efficiently integrate various delivery systems (e.g., medical, mental health, public services) to reduce disparities and improve quality of care. The ACT program, combining intensive case management services with more clinical intervention and outreach, can add substantial responsibilities, including in-home care delivery, to health care professionals' activities.^{48,54}

CTI programs expanded responsibilities of health professionals by requiring participation in initial treatment planning to identify potential areas of intervention, such as adhering to medication regimens, managing money, making followup appointments, or dealing with conflict with caregivers. These added responsibilities occur often at a time of transition from an institution to the community, when discontinuity in care might lead to homelessness; it also entails providing ongoing supervision of CTI workers by mental health professionals.^{39,40} DOT therapy required receipt of fluoxetine to be directly observed by a care provider (not a psychiatrist) with a weekly meeting with the psychiatrist for 1 month, followed by a meeting every 2 weeks for the second month, and then monthly thereafter.³⁴

KIs did not directly address the question of placing additional responsibilities on health care providers, but they did place it in a useful context. They noted that the nation lacks enough behavioral health professionals (including a dearth of psychiatrists) to address the mental health needs of those with SMI, in general. KIs also emphasized that, as an extension and intensification of this general problem, not enough psychiatrists are available to work with SMI patients who are homeless.

By Intervention Setting

The burden of additional responsibilities and need for resources also varied by setting. For example, in community mental health settings, some interventions had psychiatrists performing what they usually did to monitor medications, but needed telepsychiatry resources were added through a virtual clinical interaction.²⁴ Others provided enhanced case management with bilingual workers; weekly or biweekly followup by psychiatrists; a behavioral intervention package⁴⁷ or a psychoeducational package⁴⁴ targeting the family; a culturally tailored psychoeducational intervention;⁴⁶ and motivational interviewing to improve treatment

adherence.^{28,29} The interventions similarly required cooperation and integration with community-based psychiatric and medical clinics.^{49,57,71}

For interventions in primary care settings, mental health care was often integrated with standard medical care. Systematic support of diagnosis and management was provided by culturally tailored collaborative care interventions; these could involve medication or psychotherapy (or both) services and enhanced provider training in cultural competence to better align services and patients' needs.^{27,44,45,56,59-61,73,77} Two examples involved telepsychiatry with no additional mental health integration into primary care, one involving a psychiatrist³² and the other a telephone depression care manager.⁷⁸

In primary care clinics, this additional effort involved patient-centered assessment of barriers to access, better understanding of social stressors that disproportionately affected the particular minority group, and more culturally targeted materials to address barriers to treatment.²⁷ Interventions in obstetric-gynecologic clinics required additional personnel to provide CBT and active outreach, services that had not previously been provided.^{33,74} Studies in family planning or pediatric clinics looked at adding a nurse practitioner under supervision from a psychiatrist to better manage patients with MDD.³¹

All interventions also required increased cooperation and integration with other service providers. Most frequently this involved mental health providers colocating with nonpsychiatric medical providers.^{27,31,33,59-61,73,74} "Peer services" in this group have also been considered as an additional type of provider. The goal is to help individuals with SMI better navigate the process of obtaining and maintaining better health care, which can improve both physical and psychiatric outcomes.^{79,80}

Colocation of a mental health specialist with the primary care clinic, and the requisite cooperation between mental health and primary care providers, is a part of this collaborative model. It involves provider education, patient activation, systematic treatment monitoring, mobilization of community resources, and ready access to mental health services.^{25 81,26} Such a model requires a substantial degree of cooperation and integration. For example, the peer-led collaborative activation training (CAT) requires patient training, which consists of nine group-based 90-minute sessions delivered weekly over 2 months.⁷⁰

One potential cause of reduced care in elderly patients with SMI is that primary care providers may not know the preferences for decisionmaking among their patients with SMI or how to communicate clearly and effectively with them. A collaborative care approach that addresses this gap provided a skills training intervention consisting of CAT for SMI patients and their primary care providers (CAT-PC); its goal was to improve patient activation skills and provider communication in the primary care medical encounter.⁷⁰

Resources Needed to Provide the Intervention

Successful implementation of any of the interventions requires greater cooperation and integration with other service providers, primarily between case managers,^{39,40,48,54,55} mental health providers,^{39,40,48,54,55,60,61,74} and (in one instance) HIV providers.³⁴ Additional vocational assistance (with job training and placement assistance) and psychosocial rehabilitation services (including links to peer support and daily living skills training) appear to be key components.⁶⁵ In addition, dissemination strategies and challenges, including successful integration into large urban systems, have been described.^{66,81}

Three important organizational issues must be addressed to allow successful implementation of these types of interventions for the homeless. The first is the need to allow staff to divide their

time effectively between institution-based and community-based assignments. A second important change is to allow workers to focus their efforts on particular areas that can result in the greatest opportunity for successful transition to or maintenance in a community (in contrast with being required to provide comprehensive services to all clients). Third is the need to overcome barriers among different organizations that can prevent collaboration (e.g., the need for client consent to exchange information).⁶⁶

As indicated above, additional resources vary by setting and include the addition of bilingual case managers, more frequent followup by psychiatrists, or more comprehensive behavioral packages targeted at families. All of these added resources required a substantial addition of personnel resources (in community mental health settings),^{28,29,44-47,56} and demanded increased effort of particular personnel such as a care manager, a health care manager, a nurse practitioner, a psychotherapist, or a supervising psychiatrist (in primary care clinics).^{27,31,33,46,56,59-61,73,74,77} One study described a telepsychiatry intervention that would require additional personnel (a psychiatrist off-site) and an Internet/Webcam connection,³² while the other required an off-site depression care manager and a telephone connection.⁷⁸

The collaborative care intervention addressed in studies requires additional personnel and effort; these additional components can include a depression clinical specialist (often a nurse or psychologist) with increased followup and closer monitoring. The peer-led collaborative activation training required a 45-minute video training of primary care providers.⁷⁰ The addition of telepsychiatry required resources to provide and maintain the video-conferencing link. Other research examined involved providing ACT interventions to veterans by adding personnel, such as small specialized intensive case management teams.⁷¹

Guiding Question 3: Current Evidence About the Effectiveness (or Comparative Effectiveness) of Interventions

We identified 26 studies (reported in 37 publications) that evaluated the effectiveness or comparative effectiveness of interventions to improve access to mental health treatment, quality of care, and outcomes among disparity groups of individuals with SMI. To promote a parsimonious presentation of the included studies, we describe each of the 26 studies only once, even if it cuts across disparity, diagnostic, or outcome categories. We grouped studies into the following categories:

- Homeless: eight studies (17 articles)^{34-43,48,50-55}; all studies focused on enhanced services
- Low SES: three studies (four articles)^{24,26,28,30,31,33,44,56,58,59}; one study of enhanced collaborative care, and two studies of cognitive behavioral therapy (CBT) to treat depression in low-income women
- Racial or ethnic minorities: 11 studies (11 articles)^{24,25,27-32,44-47,56,59,78}; seven studies of some form of culturally adapted therapy, two studies of enhanced collaborative care, one study of telepsychiatry, and one study of enhanced case management through telemedicine
- Elderly: one study (two articles)^{25,26}; one study to improve access and quality of care for depression
- Geographic location (rural residence): three studies (three articles)^{24,49,57}; three studies of access to care through telemedicine

For each included study, Table 3 documents the intervention being evaluated, the participants' SMI diagnoses, and the disparity group membership(s) of the participants. We

found no studies of interventions for individuals identifying as LGBT and no studies specifically of individuals with difficulty communicating in English. However, as discussed below, several studies provided written materials or direct services through individuals who spoke the participant's primary language (when other than English) as a component of an intervention that was striving to provide culturally competent care. In relation to the primary concerns that the interventions were seeking to address, we found no studies addressing accurate diagnosis of an SMI or access to health insurance. All studies were conducted in the United States.

Table 3. Studies with evidence for GQ 3: Study citation, disparity group(s), SMI diagnosis, and type of intervention

Study Citation	Disparity Group: Low SES, Homeless	Disparity Group: Racial or Ethnic Minority	Disparity Group: Elderly	Disparity Group: Geographic Isolation (Rural)	Disparity Group: Gender	SMI Diagnosis	Intervention Being Evaluated
Arean et al., 2005 ²⁵ Arean et al., 2007 ²⁶	Separate analyses: Low income, not low income	Separate analyses: white, African American and Hispanic	Elderly			MDD or dysthymia	Primary care-based collaborative care
Burt et al., 2012 ⁴³	Homeless					Schizophrenia or affective disorder	Housing assistance
Chong 2012 ²⁴	Low income	Hispanic		Rural		MDD	Telepsychiatry
Cooper 2013 ²⁷		African American				MDD	Patient-centered, culturally tailored collaborative care
Druss et al., 2010 ⁵⁸	Low income					Depression: 33%; schizophrenia: 43%; bipolar disorder: 17%	Manualized medical care management provided by nurses
Fortney et al., 2014 ⁴⁹				Rural		PTSD	Psychiatric services through telemedicine to enhance local collaborative care
Herman 2011 ³⁵⁻³⁸	Homeless					Schizophrenia and other psychotic disorders	CTI: intervention after hospital discharge
Hinton et al., 2005 ⁵⁶		Cambodian refugees				PTSD and GAD	Culturally adapted CBT
Interian et al., 2013 ²⁸		Latino				MDD	META to improve medication adherence

Table 3. Studies with evidence for Guiding Question 3: Study citation, disparity group(s), SMI diagnosis, and type of intervention (continued)

Study Citation	Disparity Group: Low SES, Homeless	Disparity Group: Racial or Ethnic Minority	Disparity Group: Elderly	Disparity Group: Geographic Isolation (Rural)	Disparity Group: Gender	SMI Diagnosis	Intervention Being Evaluated
Kopelowicz et al., 2012 ⁴⁴		Mexican American				Schizophrenia or schizoaffective disorder	Multifamily group therapy: standard and specifically tailored for adherence
Kwong et al., 2013 ⁵⁹	Low income	Chinese American				MDD, GAD, and panic disorder	MH collaborative care model for health clinic
Lehman et al., 1997 ⁴⁸	Homeless					Schizophrenia or schizoaffective disorder	ACT assertive community outreach and case management services
Lewis-Fernandez, et al., 2013 ²⁹		First generation Latinos				MDD	Motivational interviewing in support of antidepressant medication adherence
Miranda et al., 2003 ³⁰ ; Revicki et al., 2005 ³¹	Low income	African American and Latina			Women	MDD	Pharmacotherapy with antidepressants; CBT
Moreno et al., 2012 ³²		Hispanic				MDD	Psychiatric care through Internet video-conferencing
O'Mahen et al., 2013 ³³	Low income				Women	MDD	Modified CBT for perinatal period
Patterson et al., 2005 ⁴⁵		Latino				Schizophrenia or schizoaffective disorder	PEDAL: group, cognitive behavioral intervention to improve every day functioning skills
Rosenheck et al., 1998 ⁵⁰ ; Rosenheck et al., 1998 ⁵¹ ; Lam et al., 1999 ⁵² ; Rothbard et al., 2004 ⁵³	Homeless					SMI not specified	ACCESS Program: integrated service delivery

Table 3. Studies with evidence for Guiding Question 3: Study citation, disparity group(s), SMI diagnosis, and type of intervention (continued)

Study Citation	Disparity Group: Low SES, Homeless	Disparity Group: Racial or Ethnic Minority	Disparity Group: Elderly	Disparity Group: Geographic Isolation (Rural)	Disparity Group: Gender	SMI Diagnosis	Intervention Being Evaluated
Shern et al., 1997 ⁵⁴	Homeless					SMI not specified	Assertive community outreach and case management services
Shern et al., 2000 ⁵⁵	Homeless					NYS definition of serious and persistent mental illness	The Choices program: intensive case management
Shin & Lukens, 2002 ⁴⁶		Korean American				Schizophrenia, schizoaffective disorder or schizophriform disorder	Group psychoeducation in Korean including discussion of traditional disease concepts and individual supportive therapy in Korean
Shin & Lukens, 2002 ⁴⁶		Korean American				Schizophrenia, schizoaffective disorder or schizophriform disorder	Group psychoeducation in Korean including discussion of traditional disease concepts and individual supportive therapy in Korean
Susser et al., 1997 ³⁹ ; Herman et al., 2000 ⁴⁰ ; Jones et al., 2003 ⁴¹ ; Jones et al., 1994 ⁴²	Homeless					Schizophrenia and other psychotic disorders	CTI: intervention after hospital discharge
Tan et al., 2013 ⁵⁷				Rural	Women	PTSD, MDD, or both	Psychiatric services through telemedicine and local instruction in biofeedback
Telles et al., 1995 ⁴⁷		Hispanic				Schizophrenia	Behavioral family management intervention
Tsai 2013 ³⁴	Homeless					MDD	DOT fluoxetine

Table 3. Studies with evidence for Guiding Question 3: Study citation, disparity group(s), SMI diagnosis, and type of intervention (continued)

Study Citation	Disparity Group: Low SES, Homeless	Disparity Group: Racial or Ethnic Minority	Disparity Group: Elderly	Disparity Group: Geographic Isolation (Rural)	Disparity Group: Gender	SMI Diagnosis	Intervention Being Evaluated
Uebelacker et al., 2011 ⁷⁸		Latino				MDD, minor depression or dysthymia	Depression care management support by telephone

ACCESS = Access to Community Care and Effective Services and Supports; ACT = assertive community treatment; CBT = cognitive behavioral therapy; CTI = Critical Time Intervention; DOT = directly observed pharmacotherapy; GAD = generalized anxiety disorder; GQ = Guiding Question; MDD = major depressive disorder; META = Motivational enhancement therapy for antidepressants; MH = mental health; NYS = New York State; PEDAL = Program for Training and Development of Skills in Latinos; PTSD = posttraumatic stress disorder; SMI = serious mental illness; SES = socioeconomic status.

In the tables below, we present summary information regarding the patient population, the design of the study including the treatment intervention and comparison, and the key findings. Evidence tables include more detailed data for each study (Appendix F).

Interventions for the Homeless

Overview

Eight studies examined seven interventions for homeless individuals with SMI (Table 4). Seven of the studies included services to address homelessness and considered improving housing stability to be a key intervention activity and outcome goal. The interventions addressing homelessness generally focused on individuals with psychotic or affective disorders. The two largest studies were implemented in multiple cities: the McKinney research demonstration projects⁵⁴ and ACCESS.⁵⁰⁻⁵³ Three randomized controlled trials (RCTs) were conducted in New York City, New York; two evaluated CTI, an intervention providing services to homeless men recently discharged from inpatient psychiatric hospitalizations³⁹⁻⁴²; and the third was Choices, a program of intensive case management and support.⁵⁵ An RCT evaluating the ACT program conducted in Baltimore, Maryland, evaluated outcomes after adding intensive case management to an array of services offered to program participants.⁴⁸ The last two included studies were LA's HOPE, a program focusing on housing and employment support,⁴³ and an RCT of DOT for depression; the DOT trial did not provide services to ease homelessness.³⁴

Table 4. Characteristics of studies of interventions to address disparities based on homelessness among individuals with SMI

Author, Year	Diagnosis		
	N Included in Study	Intervention	Major Benefit Outcome Measures
	Intervention Duration (Length of End of Intervention Followup)	Comparator	Group Analyses and Comparisons (If Any)
	Other Key Participant Characteristics	Cointerventions (If Any)	
Burt et al., 2012 ⁴³ Cohort and comparison Receiving services in Los Angeles	Axis I diagnosis, usually schizophrenia or affective disorder N=415 Intervention period: at least 13 months	Intervention: LA's HOPE through four public agencies and their contract service delivery programs. Technically, AB2034 participants but provided also with greater assistance with housing and employment; case managers to help with securing employment Comparison: AB2034: supportive services and housing assistance	Homelessness and other outcomes: LA's HOPE better: days in supportive housing, days housed More days employed, greater likelihood of employment
Herman et al., 2011 ³⁵ ; Tomita & Herman, 2012 ³⁶ ; Tomita & Herman, 2015 ³⁷ ; Tomita et al., 2014 ³⁸ RCT New York City	Schizophrenia (61%), schizoaffective disorder and other psychotic disorders N=150 Intervention: 9 months in CTI group, followed by 9 months of usual care only; (every 6 weeks for 18 months)	Intervention: CTI: Time-limited intervention designed to enhance continuity of care during transition from institution to community; long-term ACT model to promote independent living through building community supports by providing services during transition. Phase 1: transition, intensive support and assessing resources that exist for transition Phase 2: tryout: testing and adjusting systems of support developed during Phase 1; community providers will have assumed primary responsibility for delivering support and services, and CTI worker can focus on assessing degree to which support system is functioning as planned. Phase 3: transfer of care responsibility to community resources Comparison: No additional treatment Cointervention: Range of "usual" community-based services, depending on individual's needs, preferences, and living situation	Health services use: CTI lower odds of psychiatric rehospitalization, including after controlling for housing stability CTI reduced psychiatric rehospitalizations through improved satisfaction with family relations CTI greater perceived access to MH care No difference in stability of relationship with psychiatrist or case manager at 18 months but better at 9 months No difference in severity of instability of patient-MH service provider relationship Homelessness CTI group significantly higher probability of no homeless days past 18 weeks Quality of life CTI greater frequency of family contact and greater improvement in satisfaction with family relations at 18 months

Table 4. Characteristics of studies of interventions to address disparities based on homelessness among individuals with SMI (continued)

Diagnosis			
Author, Year	N Included in Study	Intervention	Major Benefit Outcome Measures
Design	Intervention Duration (Length of End of Intervention Followup)	Comparator	Group Analyses and Comparisons (If Any)
Setting	Other Key Participant Characteristics	Cointerventions (If Any)	
Lehman et al., 1997 ⁴⁸ RCT Baltimore, Maryland	Disabled due to a MH disorder or diagnosis of schizophrenia or schizoaffective disorder; Axis I MH disorder or extensive prior MH hospitalization history; unable to work due to a MH disorder N=152 Intervention duration: at least 12 months	Intervention: ACT for homeless; program model integrating assertive, community-based clinical treatment with intensive case management and advocacy; compared with other programs, ACT sites scored higher on scales of emergency access, longitudinality of care, team model, housing assistance, linking to entitlements, and referral advocacy Comparison: variety of community-based service organizations providing case management services to the homeless; scored similarly in relation to outreach orientation and vocational emphasis	Health service use and health outcomes: ACT fewer psychiatric inpatient days; fewer emergency department visits; more outpatient MH visits No difference general medical care service use (inpatient, outpatient, emergency department) At 12 months, ACT better clinical outcomes; no difference self-rated health status Housing and other outcomes ACT more days in stable community housing Both groups improved in quality of life and life satisfaction
Rosenheck et al., 1998; ⁵⁰ Rosenheck et al., 2002; ⁵¹ Lam & Rosenheck, 1999; ⁵² Rothbard et al., 2004 ⁵³ Cohort and comparison in some analyses 18 sites in 9 states	MDD, schizophrenia, other psychoses, personality disorder, anxiety disorder, bipolar disorder 18 sites with approximately 100 participants each; cohorts differed across analyses Intervention duration: 12 months; program duration 5 years	Intervention: ACCESS Program: to assess whether integrated systems of service delivery enhance the use of services, outreach, and the quality of life of the homeless with SMI. Sites provided outreach and intensive case management. Each site provided with funding to create outreach teams to make contact with untreated homeless with SMI and to facilitate their involvement in more intensive services, and to provide intensive case management teams to provide comprehensive services	Health service use: Among Medicaid participants in Pennsylvania, likelihood of any use and amount of psychiatric outpatient service use increased during period from before to after the program, likelihood of inpatient psychiatric use did not change but days declined Homelessness outcomes

Table 4. Characteristics of studies of interventions to address disparities based on homelessness among individuals with SMI (continued)

Diagnosis			
Author, Year	N Included in Study	Intervention	Major Benefit Outcome Measures
Design	Intervention Duration (Length of End of Intervention Followup)	Comparator	Group Analyses and Comparisons (If Any)
Setting	Other Key Participant Characteristics	Cointerventions (If Any)	
Rosenheck et al., 1998; ⁵⁰ Rosenheck et al., 2002; ⁵¹ Lam & Rosenheck, 1999; ⁵² Rothbard et al., 2004 ⁵³		Comparison: Community sites providing services for the homeless with SMI that did not receive funding for system integration	ACCESS improved access to housing services 3 months after program entry and, through these services, to independent housing after 12 months, but not other services; no difference between system integration sites and comparison sites
(continued)			
Shern et al., 1997 ⁵⁴	Psychotic disorder or affective disorder: 90% of participants	Intervention: McKinney research demonstration projects: different case management models at different sites that included rehabilitation, ACT and intensive case management. All models used assertive outreach and case management teams	Housing outcomes: Active interventions Increased attainment of community housing for participants: 47.5%
Cohort and comparison	N=894	Comparison: Usual care at 3 sites in 2 cities; differed in relation to time and intensity of services	Stable housing (residing in community housing) based on interventions in all but New York City intervention: 78%; no difference across experimental groups
Baltimore, Boston, San Diego, New York City	Followup: 12–24 months		
Shern et al., 2000 ⁵⁵	Meeting New York State's definition of serious and persistent mental illness; includes evidence of mental illness combined with serious disability resulting from mental illness	Intervention: Choices, an intensive case management program of outreach and engagement to foster relationship with staff; invitation to attend Choices Center, low-demand day program with food, showers, assistance with obtaining support services, socializing; respite housing; and assistance in finding and maintaining community housing	Health service use: No difference in emergency department, outpatient, or inpatient services; greater day program use
RCT	N=168	Comparison: told of availability of usual care, including array of homelessness and specialty MH services	Psychological status: Choices greater reduction in anxiety, depression, and thought disturbances
New York City	Followup: every 6 months for up to 24 months		Housing outcomes: Choices greater use of shelters and community housing
			Quality of life: Choices greater improvement in life satisfaction

Table 4. Characteristics of studies of interventions to address disparities based on homelessness among individuals with SMI (continued)

Diagnosis			
Author, Year	N Included in Study	Intervention	Major Benefit Outcome Measures
Design	Intervention Duration (Length of End of Intervention Followup)	Comparator	Group Analyses and Comparisons (If Any)
Setting	Other Key Participant Characteristics	Cointerventions (If Any)	
Susser et al., 1997 ³⁹ ; Herman et al., 2000 ⁴⁰ ; Jones 2003 ⁴¹ ; Jones 1994 ⁴²	Schizophrenia and other psychotic disorders	Intervention: CTI, 9 months of CTI + usual services followed by 9 months of just usual services	Health outcomes
RCT	Randomized: N=96; group with symptom outcomes at 6 months: N=76	Clinical team devised individualized plan for the transfer of care to other formal and informal supports; identified one or two specific areas in which intervention was likely to be effective in preventing homelessness, and each participant assigned to a "CTI worker" (experienced in working with this population) to implement the plan. CTI worker received supervision from a psychiatrist or other MH professional. Goal was strengthening long-term ties and determining key issues that would put patient at risk. CTI worker provided support for both patient and those who could assist him in treatment, such as visiting the family home or community residence, being present at appointments, and giving advice in crises. During first 2 weeks after discharge, CTI worker spent time with patient in the community observing his physical and social surroundings and daily habits. Subsequent support was individually tailored	CTI group greater decrease in negative symptoms at 6-month followup; no significant difference positive or general psychopathology symptoms
New York City: discharged to community following inpatient psychiatric hospitalization	Intervention duration: 18 months		Homelessness outcomes:
	Other characteristics: Men; had completed on-site treatment prior to entering the program, had been homeless for an extended period of time, being transferred from institutions to the community; many had other comorbid conditions		CTI group better: average number of homeless nights over 18 months (32 vs. 90 days), likelihood of homeless at 18 months; difference widened during the course of the study
		Comparison: Referral to MH and rehabilitation programs that were described as "generally of high quality." Staff of on-site shelter psychiatry program available upon request, referral to services as needed	Cost outcomes: Over 18 months, CTI group: \$52,374, usual care: \$51,649 including acute care services, outpatient services, housing, shelter, criminal justice, and transfer payments. CTI cost \$152 per nonhomeless night

Table 4. Characteristics of studies of interventions to address disparities based on homelessness among individuals with SMI (continued)

Author, Year	Diagnosis		
	N Included in Study	Intervention	Major Benefit Outcome Measures
	Intervention Duration (Length of End of Intervention Followup)	Comparator	Group Analyses and Comparisons (If Any)
	Other Key Participant Characteristics	Cointerventions (If Any)	
Tsai et al., 2013 ³⁴ RCT San Francisco, California	Depression: (major, minor, or dysthymia) N=137 Intervention duration: 24 weeks (12 weeks) HIV positive	Intervention: DOT with fluoxetine for 24 weeks, introduced in 3 phases of gradually increasing independence: 20 mg DOT each weekday and self-administered on weekends, for 2 weeks; 90 mg fluoxetine DOT weekly, for 22 weeks; and 90 mg self-administered weekly, for 12 weeks Psychiatrist met with participants weekly for first month, every 2 weeks for second month, and monthly thereafter Comparison: Referral only to treatment at public MH clinic specializing in care of HIV-positive persons	Health outcomes: Intervention reduced depression symptom severity and increased response and remission Adherence No difference in ART adherence or probability of viral suppression

ACCESS = Access to Community Care and Effective Services and Supports; ACT = Assertive Community Treatment; ART = antiretroviral therapy; CTI = Critical Time Intervention; DOT = directly observed pharmacotherapy; LA's HOPE = Los Angeles' Homeless Opportunity Providing Employment program; MDD = major depressive disorder; MH = mental health; N = number; RCT = randomized controlled trial; SMI = serious mental illness.

Among the seven programs whose goals were to improve housing outcomes, as well as health and other outcomes, each provided an array of some or all of the following services: enhanced outreach, intensive case management, life skills, opportunities for socializing, other supports, and linkages to needed services. Across programs, participants tended to see improvements in housing, health care service use, and quality of life. Outcomes were not superior to comparison interventions in all cases, but some of the comparison programs used alternative approaches to providing many of the same services so that improvements were seen in both groups. One RCT of DOT to promote antidepressant medication adherence resulted in improved depression outcomes.

Detailed Program Descriptions and Outcomes

The McKinney research demonstration project was conducted across sites in four cities; all included assertive outreach and intensive case management teams.⁵⁴ Usual care comparisons differed across sites. Overall, the percentage of individuals living in community housing increased over time in both the McKinney intensive case management demonstrations and the traditional case management programs. The ACCESS program was conducted at 18 sites, with the goal to improve outcomes through enhancing system integration. Sites also provided outreach and intensive case management.⁵⁰⁻⁵³ Limited data were available on the effect of the

program on use of health services. Like the McKinney demonstration, access to independent housing improved over time for both participants in ACCESS and those receiving services in comparison programs that had not received funding for system integration.

The CTI program provided services to homeless participants over an 18-month period. During the first 9 months, a CTI worker provided individualized assistance in bridging the transition from institutional care to obtaining services and promoting independent living in the community, based on a long-term ACT model. In the second 9 months, referral was available to a range of usual community-based mental health and rehabilitation services. In two RCTs of the comparative effectiveness of CTI, the comparison groups had access only to referral to usual care.³⁵⁻⁴² The earlier trial found mixed results in relation to mental health outcomes; the CTI group experienced a greater decrease in negative symptoms after 6 months but no difference in positive or general psychopathology outcomes. In a more recent trial, CTI participants had lower odds of psychiatric rehospitalization, greater perceived access to mental health services, and greater satisfaction with family relations. Both trials found that CTI was more likely to reduce homelessness.

Choices, an intensive case management day program, provided outreach and participant engagement, including food, showers, assistance with obtaining services, socializing, and respite housing.⁵⁵ An RCT evaluating the comparative effectiveness of Choices and referral to usual care found no differences in health service use (emergency department, inpatient, or outpatient) but better psychological status, greater use of shelters, and life satisfaction.

An RCT compared one of the ACT program sites with other local community-based organizations providing case management.⁴⁸ After 12 months, ACT participants had better use of psychiatric services (fewer inpatient and emergency department visits and more outpatient visits), no difference in general medical care service use, but better clinical outcomes. ACT participants also had more days in stable community housing.

LA's HOPE provided enhanced assistance with housing and employment compared with other similar programs but without the enhancements.⁴³ After approximately 1 year, LA's HOPE participants were more likely to have secured housing and employment.⁴³

An RCT for homeless HIV-positive patients with depression randomized participants to either DOT with fluoxetine or referral to a mental health clinic. The DOT intervention was associated with reduced depression symptom severity, but it had no effect on antiretroviral therapy adherence.³⁴

Interventions for Low-Income Individuals

Overview

Two of the five studies that evaluated interventions for low-income individuals (not identified as homeless) were grouped together because they similarly include CBT in at least one of the intervention arms^{30,31,33} (Table 5). Both CBT studies also provided support services and were found to be superior to treatment as usual. A third study, a collaborative care model designed to ease various barriers that can be faced by low-income SMI patients in accessing primary care, was found to be effective in patients' receipt of recommended services.⁵⁸ A fourth study, limited to a low-income population, concerned telepsychiatry; it is discussed with studies of interventions to address disparities based on rural residence.²⁴ A fifth, concerning a collaborative care intervention for low-income Chinese Americans with MDD, is discussed with other studies focusing on racial/ethnic minority individuals with SMI.⁵⁹

Table 5. Characteristics of studies of interventions to address disparities based on being low income among individuals with SMI

Diagnosis			
Author, Year	N Included in Study	Intervention	Major Benefit Outcome Measures
Design	Intervention Duration (Length of End of Intervention Followup)	Comparator	Group Analyses and Comparisons (If Any)
Setting	Other Key Participant Characteristics	Cointerventions (If Any)	
Druss et al., 2010 ⁵⁸ RCT Community mental health clinic in Atlanta	Schizophrenia/schizoaffective disorder, bipolar disorder or depression N=407 (12 months from baseline) Co-occurring substance disorder: 25%; African American: 77%; hypertension: 46%	Intervention: PCARE, including manualized care management provided by nurses to address patient barriers (information about medical conditions and their treatment, motivational interviewing, action plan), provider barriers (assistance with communicating with clinicians including conduit and coaching), and system barriers (help with enrollment into Medicaid and bus tokens) Comparator: usual care consisting of list of local primary care providers	Access and adherence to health care services: Receipt of recommended preventive and evidence-based services Mental and physical health quality of life measures and reduction in cardiovascular risk factors
Miranda et al., 2003 ³⁰ , Revicki et al., 2005 ³¹ RCT Clinics in Maryland counties near Washington, DC, and Arlington and Alexandria, Virginia	MDD N=267 Intervention duration: medication, 6 months; CBT, 8 or 16 weeks; comparison varied (6 and 12 months) Women; primarily African American and Hispanic (96%)	Intervention: Women Entering Care Study, two separate arms: Pharmacotherapy managed by a primary care nurse practitioner CBT: individual or group, provided by licensed clinical psychologist; 8 weeks of treatment that could be extended to 16 if needed Both arms: all written materials available in Spanish for Spanish-speaking women, clinicians experienced treating this population, education sessions available to those reluctant to receive treatment, funds for transportation and child care provided Comparison: community referral including education about depression and its treatment; referral to appropriate community provider (one-quarter declined referral)	Access and adherence to health care services: Women randomized to medications: 75% completed 9 or more weeks Women randomized to CBT: 53% received 4 or more sessions Women receiving community referral: 83% attended no sessions Health outcomes At 6 months, pharmacotherapy and CBT both resulted in better depression outcomes; results did not differ by race/ethnicity At 12 months, both pharmacotherapy and CBT had greater number of depression-free days; the cost per additional depression-free day was \$24.65 for pharmacotherapy and \$27.04 for CBT

Table 5. Characteristics of studies of interventions to address disparities based on being low income among individuals with SMI (continued)

Author, Year	Diagnosis		
	N Included in Study	Intervention	Major Benefit Outcome Measures
	Intervention Duration (Length of End of Intervention Followup)	Comparator	Group Analyses and Comparisons (If Any)
	Other Key Participant Characteristics	Cointerventions (If Any)	
O'Mahen et al., 2013 ³³	MDD	Intervention: modified CBT, adapted for the perinatal period, included motivational interviewing, behavioral activation, cognitive restructuring, and interpersonal support	Adherence to treatment
RCT	N=55		CBT group: 83% attended at least 1 session, 60% were adherent (4 or more, of up to 12 sessions); comparison group: 17% received any psychotherapy
Obstetrics clinics that primarily serve low-income women	Intervention duration: 16 weeks (3 months)	Also, active outreach, including reminder phone calls and flexible rescheduling for women who missed or cancelled appointments	Health outcomes
	Perinatal women, pregnant at baseline	Comparison: Treatment as usual, feedback and psychoeducational materials about perinatal depression, local referral for psychotherapy and case management. Risk reassessed at each interview	CBT group better depression outcomes and end of treatment period and at followup.

CBT = cognitive behavioral therapy; MDD = major depressive disorder; N = number; PCARE = Primary Care Access, Referral, and Evaluation; RCT = randomized controlled trial; SMI = serious mental illness.

Detailed Program Descriptions and Outcomes

The two studies focusing on CBT treatment for low-income women with MDD were RCTs that evaluated the comparative effectiveness of this treatment for depression with usual care. In one of the studies, entitled Women Entering Care, a pharmacotherapy arm was also compared with usual care.^{30,31} In both studies, usual care provided education and referral to community mental health providers; only a small percentage of women adequately followed up on the referral and received psychotherapy services. In contrast, in the intervention arms, women were more likely to receive CBT or pharmacotherapy. Both interventions being tested were offered on-site at a clinic in which women were already receiving services. Also, both provided support services. The Women Entering Care study offered materials in Spanish, services through culturally aware clinicians, preliminary educational sessions for those who may be reluctant to enter treatment, and financial assistance for day care and transportation. The second intervention, focusing on low-income perinatal women, included active outreach to help women schedule and, if necessary, repeatedly reschedule appointments.³³ In both studies, depression outcomes were superior in the intervention arms.

The third study is a large RCT (N=407), called the PCARE study, which evaluated the efficacy of a manualized enhanced collaborative care intervention delivered by nurses to overcome patient-, provider-, and system-level barriers to primary care among a low-income patient population with SMI, who were receiving mental health services in an urban community mental health clinic. Services included information about medical conditions, motivational interviewing, and assistance in communicating with clinicians and enrolling in health insurance.

Patients in the intervention arm, compared with usual care (lists of providers), obtained a significantly larger percentage of recommended preventive services, including physical exams, screening tests, educational interventions, and vaccinations. The intervention arm also showed significantly greater improvement in sustaining a primary source of care and higher scores on measurements of mental health quality of life.

Interventions for Racial and Ethnic Minority Groups

Overview

Fourteen studies evaluated enhanced interventions for particular racial or ethnic disparity groups. Of these, 11 are discussed in this section of the report (Table 6). The 3 remaining studies are discussed in other sections of the results: The first is presented in relation to interventions for the elderly,^{25,26} the second in relation to interventions for rural populations,²⁴ and the third in relation to interventions for low-income groups.^{30,31}

Table 6. Characteristics of studies of interventions to address disparities based on race or ethnicity among individuals with SMI

Author, Year	Diagnosis		
	N Included in Study	Intervention	Major Benefit Outcome Measures
	Intervention Duration (Length of Intervention Followup)	Comparator	
	Setting	Cointerventions (If Any)	Group Analyses and Comparisons (If Any)
Other Key Participant Characteristics			
Cooper 2013 ²⁷	MDD	Intervention: Blacks Receiving Interventions for Depression and Gaining Empowerment study. Patient-centered, culturally tailored collaborative care strategy delivered by PCP, consultation-liaison psychiatrist team, and female African-American depression care manager. Services included followup, needs assessment, education, individualized approach to engagement and counseling	Adherence to treatment: Medication rates increased in comparison but not intervention group
Cluster RCT	N=132 receiving services from 36 PCPs	Comparison: standard collaborative care strategy: delivered by PCP, white female depression care manager. Services included followup, needs assessment, and generic educational materials	Quality of care: Intervention group more likely to consider clinician as participatory, and rate their care manager as helpful
10 urban community-based primary care clinics in Maryland and Delaware	Intervention duration: NR (6, 12, 18 months)		Health outcomes: Both groups improved depression symptom levels, mental health functioning
	African American		

Table 6. Characteristics of studies of interventions to address disparities based on race or ethnicity among individuals with SMI (continued)

Diagnosis			
Author, Year	N Included in Study	Intervention	Major Benefit Outcome Measures
Design	Intervention Duration (Length of Intervention Followup)	Comparator	Group Analyses and Comparisons (If Any)
Setting	Other Key Participant Characteristics	Cointerventions (If Any)	
Hinton et al., 2005 ⁵⁶	Treatment-resistant PTSD and comorbid panic attacks	Intervention: culturally adapted CBT Comparison: delayed treatment	Health outcomes: Treatment group: at end of treatment, significantly greater percentage no longer met criteria for PTSD; significantly greater percentage no longer met criteria for GAD
RCT	N=40		
Community-based outpatient clinic providing specialized services to Cambodian refugees	Intervention duration: 12 weeks (12 weeks post end of treatment) Cambodian refugees		
Interian et al., 2013 ²⁸	MDD	Intervention: META, 3 individual sessions to improve medication adherence + usual care	Adherence to treatment
	N=50		META group significantly higher antidepressant adherence at time 2 and time 3, controlling for baseline adherence and attending ≥1 therapy session
RCT	Intervention duration: assessment at time 2: 5 weeks (after 2 sessions) and Time 3: 5 months (after 3 sessions)	Comparison: usual care, including pharmacotherapy and some psychotherapy treatment	
Community Mental Health Center in New Jersey, bilingual, mostly Spanish-speaking patients	Latinos, primarily Spanish-speaking preference, foreign born		Groups did not differ on change in mean BDI score, but META group significantly more likely to achieve depression symptom remission at Time 3 (OR=7.0), controlling for baseline depression, attending ≥1 therapy session, total adherence

Table 6. Characteristics of studies of interventions to address disparities based on race or ethnicity among individuals with SMI (continued)

Diagnosis			
Author, Year	N Included in Study	Intervention	Major Benefit Outcome Measures
Design	Intervention Duration (Length of Intervention Followup)	Comparator	Group Analyses and Comparisons (If Any)
Setting	Other Key Participant Characteristics	Cointerventions (If Any)	
Kopelowicz et al., 2012 ⁴⁴	Schizophrenia or schizoaffective disorder	Two intervention arms:	Adherence to medication
	N=174	Intervention: Treatment as usual plus 24 sessions over 12 months for patient and family member of MFG-Standard or Adherence	No difference between groups
RCT	Intervention duration: 12 months (12 months post end of treatment)	MFG-Standard: Sessions focusing on understanding the disease, sharing experiences, identifying problem situations, and learning 6-step problem-solving approach	Hospitalization
6 inpatient psychiatry facilities and 2 outpatient community treatment-resistant PTSD and comorbid panic attacks	Hispanic, Spanish-speaking living with a family member, nonadherent to psychiatric medication	MFG-Adherence: Sessions focus on specific obstacles to maintaining medication adherence guided by the Theory of Planned Behavior	MFG-Adherence longer time to first hospitalization and less likely to have any hospitalization than other 2 groups
Mental health facilities in the LA area		Comparison: Treatment as usual	Health outcomes
			All groups improved over time in psychiatric symptoms but no difference between groups
Kwong et al., 2013 ⁵⁹	MDD, GAD, and/or panic disorder	Intervention: collaborative care model including depression care manager to coordinate depression care with PCP, active monitoring of symptoms, adherence to treatment and proactive collaboration between PCP and MH specialists. Self-help manuals in English and Chinese, field tested for cultural relevancy and literacy level	Health outcomes:
RCT	N=57		Both groups significant reduction of depressive symptoms and anxiety and improved MH functioning; no significant difference between the two groups
FQHC in Chinatown, New York City	Intervention duration: 12 weeks (1 month)	Comparison: physician and patient in enhanced physician care group that jointly decides appropriate treatment regimen; PCP responsible for all aspects of patient treatment	
	Chinese American, low income, poor or no English language skills: 68%		
Lewis-Fernandez, et al., 2013 ²⁹	MDD	Intervention: motivational pharmacotherapy, which includes motivational interviewing, open-label antidepressant therapy, and attention to Latino cultural concerns about antidepressants	Retention in the intervention over the 12-week period: 80%, considered to be a measure of feasibility
	N=50	Comparison: None	
Pre-post pilot study	First-generation Latino, Spanish monolingual: 92%		
Community sample			

Table 6. Characteristics of studies of interventions to address disparities based on race or ethnicity among individuals with SMI (continued)

Diagnosis			
Author, Year	N Included in Study	Intervention	Major Benefit Outcome Measures
Design	Intervention Duration (Length of Intervention Followup)	Comparator	Group Analyses and Comparisons (If Any)
Setting	Other Key Participant Characteristics	Cointerventions (If Any)	
Moreno et al., 2012 ³²	MDD	Intervention: Treatment by a bilingual psychiatrist through 6 monthly Internet videoconferences (Webcam)	Quality of care:
RCT	N=167		Telepsychiatry considered effective and acceptable
Community Health Center	Intervention duration: 6 months (3 and 6 months post-baseline)	Comparison: Treatment as usual from a PCP, using AHRQ guidelines	Health outcomes:
	Hispanic		Intervention related to significant improvement in depression severity, quality of life, and functional ability
Patterson et al., 2005 ⁴⁵	Schizophrenia or schizoaffective disorder	Intervention: PEDAL, focusing on improving everyday functioning, including medication management, social and communication skills, organization and planning, transportation, and financial management through culturally competent group sessions in Spanish	PEDAL group better on performance-based skills assessment (end of treatment) and medication management (12 months)
Trial randomized by site	N=29		
3 mental health clinics in San Diego County (near the U.S.-Mexico border)	Intervention duration: 24 twice-weekly sessions (6- and 12-month followup)	Comparison: time equivalent friendly support group	No difference in social skills performance, psychopathologic symptomatology, or quality of well-being
	Latino		
Shin & Lukens, 2002 ⁴⁶	Schizophrenia, schizoaffective disorder or schizophreniform disorder	Intervention: 10 weekly group psychoeducational sessions in Korean, and integrating traditional Korean disease concepts plus 10 weekly individual supportive therapy visits conducted in Korean by a master's student	Health outcomes:
RCT	N=48		Intervention group greater improvement in psychiatric symptoms, stigma devaluation, and better coping skills
Outpatient mental health clinic in Queens, New York	Intervention duration: 10 weeks	Comparison: 10 weekly individual supportive therapy visits conducted in Korean by a master's student	
	Korean American		

Table 6. Characteristics of studies of interventions to address disparities based on race or ethnicity among individuals with SMI (continued)

Author, Year	Diagnosis	Intervention Comparator Cointerventions (If Any)	Major Benefit Outcome Measures Group Analyses and Comparisons (If Any)
	N Included in Study		
	Intervention Duration (Length of Intervention Followup)		
	Other Key Participant Characteristics		
Telles et al., 1995 ⁴⁷ RCT Los Angeles, public mental health clinics	Schizophrenia N=40 Intervention duration: 1 year Hispanic (Mexican, Guatemalan, or Salvadoran descent), living in the community with a family member	Intervention: case management plus behavioral family management intervention including family education about schizophrenia, communication, and problem-solving skills training. Translations and sociocultural adaptation of materials Comparison: Case management, no regular family involvement Cointervention: weekly case management by bilingual, bicultural social workers, weekly or biweekly medication reassessments, weekly clinic appointments for 6 months, every 2 weeks for next 3 months, and monthly for last 3 months	Health outcomes: Intervention was related to greater exacerbation of symptoms in less acculturated patients Among more acculturated patients, exacerbation related to poor medication compliance but not intervention
Uebelacker et al, 2011 ⁷⁸ RCT Medicaid health maintenance organization (HMO)	MDD, minor depression or dysthymia N=38 12 weeks Latino	Intervention: depression care management support by telephone (D-HELP) in a Medicaid HMO setting, plus treatment as usual Comparison: treatment as usual, including MH care through a PCP and taking antidepressant medication	Access to care: No difference in number of visits Adherence to medication: No difference in antidepressant use Quality of care: No difference in client satisfaction measures Health outcomes: No difference in depression severity or functional status

AHRQ = Agency for Healthcare Research and Quality; BDI = Beck Depression Inventory; CBT = cognitive behavioral therapy; D-HELP = depression care management support by telephone; FQHC = Federally Qualified Health Center; GAD = generalized anxiety disorder; HMO = health maintenance organization; MDD = major depressive disorder; META = Motivational Enhancement Therapy for Antidepressants; MFG = Multifamily Group Therapy; MH = mental health; N = number; OR = odds ratio; PCP = primary care provider; PEDAL = Program for Training and Development of Skills in Latinos; PTSD = posttraumatic stress disorder; RCT = randomized controlled trial; SMI = serious mental illness.

Each of the interventions was culturally tailored to the particular group. Of the 11 studies discussed in this section, 2 studies compared culturally adapted collaborative care strategies to more traditional care-enhanced models in primary care settings, primarily among patients diagnosed with MDD (African American, Chinese American), and found that treatment improved in both groups.^{27,59} A third study found superior results among Hispanic patients with MDD through a telepsychiatry intervention provided by a bilingual psychiatrist compared with standard of care by a PCP.³² A fourth study tested case management support for depression

delivered via telephone among Latino patients with MDD in addition to usual care, and found no difference in access to care or health outcomes.⁷⁸

The remaining seven studies evaluated various forms of culturally adapted therapy; each provided services in a language other than English. Among these, three interventions focused on Hispanic or Latino populations with schizophrenia. Two of the studies added an approach to enhance family engagement in care to support a family member with schizophrenia,^{44,47} and a third provided patients with a cognitive behavioral intervention intended to improve their everyday functioning.⁴⁵ Results were mixed. Two studies focused on Latino populations with MDD and tested motivational interviewing, successfully improving medication adherence and retention in treatment.^{28,29} One study found superior results by enhancing individual supportive therapy: For Korean patients with schizophrenia, the study added a psychoeducational intervention that integrated traditional Korean disease concepts.⁴⁶ The final study discussed in this section compared the effectiveness of no treatment to culturally adapted CBT provided to Cambodian refugees with PTSD and comorbid panic attacks.⁵⁶ Mental health outcomes in the intervention group were superior.

Detailed Program Descriptions and Outcomes

Two studies examined collaborative care models among patients with MDD receiving care in primary care settings. In one, African-American patients were provided with depression care managers who were African American,²⁷ and in a second study, the researchers sought to provide Chinese-American patients with depression care managers as well as culturally and linguistically relevant materials.⁵⁹ Both studies examining culturally tailored collaborative care models compared the new approach with a more standard collaborative care or enhanced physician-patient engagement approach. Patient outcomes improved over time in both arms of each study.

One study tested a telepsychiatry intervention, using commonly available Webcam technology among Hispanic patients with MDD receiving health care in a community health center.³² Compared with treatment as usual with a PCP, patients in the intervention arm showed greater improvement in depression symptoms, quality of life, and level of disability. The researchers concluded that the intervention was both effective and acceptable as a treatment modality.

In one report, the Depression Health Enhancement for Latino Patients (D-HELP) study tested enhanced bilingual case management support for depression delivered via telephone among Latino patients with MDD receiving health care in a Medicaid health maintenance organization.⁷⁸ Patients in both arms received treatment as usual through a PCP and antidepressant medication. The intervention was considered promising by the researchers, but the results did not reach statistically significant differences ($p < 0.05$) for any outcomes measured, including number of visits, medication adherence, quality of care, depression severity, and functional status.

The remaining seven studies discussed in this section tested some form of culturally adapted therapy. Two of these studies were RCTs that focused on Hispanic patients with schizophrenia and examined the effect of greater family engagement in treatment support compared with treatment limited to the individual patient.^{44,47} The larger study, conducted across eight mental health facilities in the Los Angeles area, examined two culturally adapted multifamily group therapy interventions: One was described as addressing standard issues in managing the disease, including understanding and managing problem situations, and the second as focusing on medication adherence. Both interventions were conducted for 12 months and included “survival

skills” sessions for family members. This study found no differences between the intervention groups and treatment as usual in medication adherence but did find support for reduced hospitalizations (both time to hospitalization and number of hospitalizations).⁴⁴ The second study, also conducted in the Los Angeles area, found that a behavioral family intervention that sought to provide family members with education about the disease, communication skills, and problem-solving skills might actually worsen results, including exacerbation of symptoms among less acculturated patients.⁴⁷ Among more acculturated patients, outcomes were more likely to be related to medication compliance. Overall, the researchers concluded that patient acculturation was an important characteristic to consider in relation to treatment outcomes.

The third study focusing on Latino patients with schizophrenia, Program for Training and Development of Skills in Latinos (PEDAL), provided 24 twice-weekly group educational sessions to patients to promote improvement in functional skills, including medication management, social and communication skills, organization and planning, transportation, and financial management.⁴⁵ Limited to only 29 participants, this manualized cognitive behavioral intervention was compared with participation in a friendly support group. Results were equivocal and likely underpowered; no outcome was consistently better in the intervention group at end of treatment and at the 6- or 12-month followup.

Two studies, an RCT compared with usual care called Motivational Enhancement Therapy for Antidepressants (META)²⁸ and a pre-post study²⁹ examined the effect of culturally adapted motivational pharmacotherapy on antidepressant medication adherence among Latino patients with MDD. The interventions in both studies found greater improvement in adherence and mixed results in depression symptom outcomes.

An RCT compared a psychoeducational intervention to individual supportive therapy for Korean Americans with schizophrenia.⁴⁶ Conducted in an outpatient mental health clinic by a psychiatric social worker, the intervention integrated traditional Korean disease concepts into the sessions. At 10 weeks, the intervention group was found to have a greater decrease in psychiatric symptoms, felt less stigma related to their mental illness, and reported better coping skills.

Lastly, Cambodian refugees with PTSD and comorbid panic attacks were randomized to culturally adapted CBT and delayed treatment.⁵⁶ Both arms received supportive psychotherapy and pharmacotherapy in a community-based outpatient clinic providing specialized services to this population. Participants in the CBT intervention had lower levels of PTSD and anxiety symptoms at the 12-week followup.

Interventions for the Elderly

We identified only one study that examined enhanced treatment for MDD specifically for elderly patients^{25,26} (Table 7). The intervention in this large multisite RCT, conducted in primary care sites, followed a collaborative care, stepped-care approach. Intervention components included (1) education for PCPs about late-life depression; (2) a depression care manager to work with the patient and PCP to activate the patient to manage his or her care, provide ongoing monitoring of mood and medication, and provide brief psychotherapy; (3) a clinical information tracking system; and (4) access to consultation with a psychiatrist when needed. In comparison with usual care, which could be any care or no care, intervention participants were more likely to use treatment services for their MDD and to experience better depression outcomes. Superior results were experienced across race and ethnicity groups (African American, Hispanic, and white) and income groups (low and high).

Table 7. Characteristics of studies of interventions to address disparities based on being elderly among individuals with SMI

	Diagnosis			
	N Included in Study			
Author, Year	Intervention Duration (Length of End of Intervention Followup)	Intervention		Major Benefit Outcome Measures
Design		Comparator		
Setting		Cointerventions (If Any)		Group Analyses and Comparisons (If Any)
	Other Key Participant Characteristics			
Arean et al., 2005 ²⁵	MDD or dysthymia N=1,801	Intervention: Improving Mood-Promoting Access to Collaborative Treatment (Impact) Study: primary care-based collaborative care model including depression care manager, ongoing mood and medication monitoring using evidence-based treatment guidelines, brief psychotherapy, depression clinical specialist developed individual treatment plan with patient		Access to health care services:
Arean et al., 2007 ²⁶	Intervention duration: 1 year (3, 6, and 12 months)			Intervention patients in each race/ethnicity and income group improved use of services (utilization of antidepressant medication and psychotherapy)
Multisite RCT	60 years of age and older	Comparison: Usual care from PCP, any MH provider, or no treatment		Health outcomes:
18 Primary care sites	Groups: African American, Hispanic, and white; low income and not low income			Intervention patients in each race/ethnicity and income group had better depression outcomes

MDD = major depressive disorder; MH = mental health; N = number; PCP = primary care provider; RCT = randomized controlled trial; SMI = serious mental illness.

Interventions for Rural Populations

Three studies examined the use of telemedicine services for individuals living in rural areas and receiving services in clinics considered to have inadequate availability of local psychiatric services (Table 8). The telemedicine services were provided in addition to locally based care. Two of the interventions were implemented in Department of Veterans Affairs Community-based Outpatient Clinics (CBOCs): one for male veterans with PTSD⁴⁹ and one small study for female veterans with PTSD, MDD, chronic pain, or combinations of these diagnoses.⁵⁷ The third intervention was provided to low-income Hispanic patients with MDD who were receiving services at a community health center.²⁴ These interventions were found to be feasible enhancements to local services. Improvement in health outcomes were mixed.

Table 8. Characteristics of studies of interventions to address disparities based on rural residence among individuals with SMI

Diagnosis			
Author, Year	N Included in Study	Intervention	Major Benefit Outcome Measures
Design	Intervention Duration (Length of End of Intervention Followup)	Comparator	Group Analyses and Comparisons (If Any)
Setting	Other Key Participant Characteristics	Cointerventions (if any)	
Chong 2012 ²⁴	MDD	Intervention: At CHC, telepsychiatry sessions (1/2hour) provided by Hispanic psychiatrists; medication management based on Texas Medication Algorithm Project model	Access to health care services:
RCT	Randomized: N=167		No difference in appointment keeping
CHC, Tucson, Arizona	Intervention duration: 6 months	Comparison: Usual care at CHC including referral to MH specialist (sessions 1 hour)	Intervention patients better working alliance with psychiatrist, visit satisfaction, antidepressant use
	Low income, Hispanic		Health outcomes: No difference in depression scores, number of work days lost
Fortney et al., 2014 ⁴⁹	PTSD	Intervention: PTSD care team used telemedicine outreach for PTSD (TOP), telemedicine to provide telepsychiatric services to enhance and support collaborative care at local CBOC including care manager and 12 sessions of CPT	Access to health care services:
Multisite RCT	Randomized: N=265		Intervention patients more likely to receive CPT but no difference in medication use
11 VA CBOCs	Intervention duration: 12 months (6 and 12 months)	Comparison: Usual care at CBOC including pharmacotherapy and counseling	No difference in adherence
	Male veterans, MDD: 79%		Health outcomes: Intervention patients greater improvement in PTSD
Tan et al., 2013 ⁵⁷	PTSD, MDD, or both	Intervention: Biofeedback training with weekly clinical video-teleconference support sessions. Sessions included clinical video-teleconference group-based treatment, education, pain-coping skills training, and support elements	Access to health care services:
Single group pre-post study	Participants: N=34		Protocol was feasible
Two rural Texas CBOCs areas	Intervention duration: 6 weeks (6 weeks)	Comparison: Pre-post study, one group was compared with previous group	Health outcomes: Some improved pain measures, depression, and PTSD symptoms No improvement in pain intensity

CBOC = community-based outpatient clinic; CHC = community health center; CPT = cognitive processing therapy; MDD = major depressive disorder; MH = mental health; N = number; PTSD = posttraumatic stress disorder; RCT = randomized controlled trial; SMI = serious mental illness; TOP = telemedicine outreach for PTSD; VA = Department of Veterans Affairs (Veterans Administration).

Summary and Implications: Guiding Question 4

Using our findings from the GQs (GQs 1, 2, and 3), we now discuss important issues that have not been adequately addressed in the current research base and that merit high-priority attention for future research. These include gaps in the knowledge base and the evidence for the effectiveness or comparative effectiveness of strategies addressing critical disparities among groups of people with SMI. In addition, we comment on future areas of research (including research that may be in a planning stage, but not yet completed). Finally, we discuss major implications to be drawn from the findings of this Technical Brief and next steps.

Summary Findings

Based on the topic nomination, the focus of this Technical Brief is adults with SMI who also fall within specific, generally established, disparity groups: (1) racial/ethnic minorities; (2) women; (3) economically disadvantaged individuals (including homeless individuals); (4) elderly individuals (≥ 65); (5) individuals living in rural areas; (6) individuals identifying as LGBT; and (7) individuals with difficulty communicating in English because it is a second language. These groups were among a larger list considered a priori, and we developed the final set after input from our KIs, who emphasized the importance of the elderly, homeless, and LGBT populations.

Interventions were required to target one of the above listed groups, and we categorized them along the continuum of health care as points of possible intervention. Briefly, again, these were (1) access to health care (including health insurance), (2) accurate diagnostic evaluation, (3) quality of treatments, (4) access to other health-sustaining services such as housing or other supports necessary to maintain health and adherence to treatment, and (4) final health care outcomes. We kept this context in mind when designing our literature search criteria (as described in Methods). GQ 3 was limited to a review of studies that could provide information on effectiveness, with the goal of this Technical Brief being to map the existing evidence, rather than to systematically review comparative effectiveness.

Across all the 26 GQ 3 included studies (covered in 37 articles), many studies included individuals of more than one disparity group and discussed interventions for multiple disparity groups at once. This factor complicated our analyses because, generally, we strove to describe a study only once. Examples of these “overlapping” groups include the following: elderly minority patients^{25,26} and low-income minority women.³⁰ See Table 3 for a full description of the overlapping disparity groups targeted in interventions included as evidence for GQ 3.

When we combined the homeless group with the low SES disparity group, interventions mostly focused on economically disadvantaged individuals, followed by racial or ethnic minority groups, and were least focused on elderly individuals. Specifically, within the SMI population disparity groups, 15 of the 26 identified studies focused on economically disadvantaged individuals (combining the homeless disparity group and the low SES disparity group).^{24-26,30,31,33-43,48,50-55,58,59,78} Fourteen studies included minority racial or ethnicity populations^{24-32,44-47,56,59,78}; 10 of which were focused on the Latino community,^{24-26,28-32,44,45,47,78} 3 on African Americans,^{25-27,30,31} and 2 on Asian Americans.^{46,59} Three studies addressed rural populations,^{24,49,57} 3 studies focused on women,^{30,31,33,57} and one study addressed elderly individuals.^{25,26} No studies focused on LGBT populations or individuals who have difficulty communicating in English, outside of more comprehensive culturally competent interventions.

In relation to the continuum of health care as points of possible intervention: 7 studies addressed access to health care, although none addressed health insurance specifically; no studies addressed receipt of accurate diagnostic evaluation; 14 studies addressed quality of care; and 5 studies addressed final health care and other related outcomes, with 2 studies looking specifically at housing.

A variety of interventions to reduce disparities have been studied. Eight studies looked at some form of case management,^{36-43,47,48,54,55,78} including two studies employing ACT^{48,54} and two employing CTI.³⁵⁻⁴² Eight studies also tested some form of culturally adapted therapy (including individual, group, and family).^{28-31,33,44-46,56} Four studies examined a collaborative care intervention^{25-27,58,59}; four studies used telepsychiatry,^{24,32,49,57} one study tested integrated systems service delivery,⁵⁰⁻⁵³ and one study examined DOT.³⁴

From a diagnostic perspective, 13 studies were based in a population with depressive disorders,^{24-34,57-59,78} 9 studies included populations with psychotic disorders,^{35-48,55} 4 with anxiety disorders,^{49,56,57,59} and 3 studies did not specify the type of SMI.⁵⁰⁻⁵⁵

In the context of evaluating the effectiveness of interventions to address disparities in SMI, current research has mainly focused on economically disadvantaged individuals, especially those who are homeless, and racial or ethnic minority disparity groups. Along the health care continuum, access to health care (not specifically health care insurance) is the targeted point for intervention. Enhancing case management services and using some form of culturally adapted therapy are the most common types of interventions used to address disparities in SMI. Depressive and psychotic disorders are the main diagnosis types treated in these types of interventions, which may be a result of the high prevalence of these conditions in economically disadvantaged individuals, including homeless individuals, and racial or ethnic minority disparity groups.

Overall, many studies reported effects in improving outcomes across diagnostic and disparity groups. However, few interventions were replicated, and comparisons varied greatly across studies. Because of this, the evidence can only suggest what are likely to be successful intervention models or useful enhancements to existing interventions. More specifically, for the homeless, interventions were complex and multifaceted; they combined a number of services delivered by treatment teams. These programs tended to improve housing outcomes and health care service use. Culturally adapted collaborative care models that provide psychiatric services to patients beyond those that would normally be available in the primary care setting or help patients coordinate and manage their care were found to enhance health outcomes.

Telepsychiatry is a promising approach among individuals who are isolated from needed mental health services because they live in rural areas or because they are members of a minority culture and would be more comfortable receiving treatment in a language other than English, particularly if it is delivered by someone from a similar cultural background. Culturally adapted therapy, including CBT, showed promise, as did motivational interviewing and DOT. The effectiveness of several approaches requires further study. Telephone management delivered by nonclinical staff did not improve outcomes in one small study. Interventions to enhance family involvement in the care of Latino family members with schizophrenia were mixed. In one study, results were worse than those through patient-only care.

Gaps in Evidence Base

Significant gaps in the evidence base exist both for the disparities studied in the included literature of this Technical Brief and for key disparity groups for which we could find no

research. There is a growing need for additional research to be conducted before the comparative effectiveness of interventions to reduce disparities among individuals with SMI can be accurately assessed. There is a striking absence of interventions addressing disparities faced by individuals identifying as LGBT with SMI, and there is still a need for more research addressing racial and ethnic groups. For example, there were no studies looking at the Native American population, and only 3 studies directly focused on African Americans. Estimates of SMI are similar between African Americans and Latinos, approximately 3 percent, according to the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA),⁹ yet there were still only 3 studies focusing on an African-American population and only 10 focusing on a Latino population. The literature emphasized the importance of not assuming that one intervention will be effective in all minority populations. As an example, when all 4 years of the ACCESS data were examined, ACT was associated with a reduction in service use disparities for African Americans but not for Latinos.⁶⁴

Furthermore, researchers have called for more carefully designed intervention studies to allow for racial/ethnic minority-specific analyses.⁸² Rural, female, and elderly populations with SMI were poorly represented in the current literature, despite the fact that they each represent significant groups within the total SMI population. Although no studies targeted only the issue of SMI patients who experience difficulty communicating in English, several studies (focusing on Latino and Asian-American populations) did make services or materials available in languages other than English, as part of a more complex culturally adapted intervention addressing more than one problem area for the disparity group.

Along the health care continuum, gaps are evident where there are opportunities for interventions. Although several studies examined access to health care (i.e., therapeutic services), none addressed access to health care insurance (or coverage within health care plans), and none addressed receipt of accurate diagnostic evaluation, despite evidence that such a disparity exists.⁸³

Thus, numerous gaps in the evidence base exist, both in terms of particular disparity groups and along the continuum of health care, particularly in terms of access to health insurance and accurate diagnosis. There is a need for additional research looking at interventions in different diagnostic groups, such as testing telepsychiatry interventions for individuals with schizophrenia located in rural areas. In fact, one could imagine almost endless combinations of different disparity groups, different interventions types, different diagnostic populations, and different health care outcomes. This is a critical point, because the literature to date does not suggest that a proven intervention type works across all disparity and diagnostic groups. For example, collaborative care has been primarily studied in racial minority groups with depressive disorders by helping this specific population obtain access to and use quality treatments for depression; however, whether these findings generalize to the LGBT population with depression is unknown.

KI discussions mirrored the gaps discussed above that we found in the literature. Multiple KIs mentioned the absence of literature addressing the LGBT population with SMI. They also agreed that relatively little literature addresses either rural populations with SMI or elderly persons and that the latter are of particular concern because of the aging U.S. population. Furthermore, one KI pointed out that no research is available on cultural competency at the assessment (diagnostic) level for these SMI subpopulations and how this capability can affect patients' outcomes (for better or worse). KIs generally agreed with the importance of Federal funding for disparity research and the need to conduct such research rigorously and dispassionately. Compared with usual care, most of these interventions produced improvement in

the targeted outcomes within the disparity group that was the focus of the study. For example, in one study, CBT to treat depression was enhanced with specific perinatal content and an interpersonal component.³³

Limitations of the Technical Brief

The ability to review the relevant evidence base for this topic has some general limitations. First, as noted in the text, many of the disparities overlapped (e.g., sometimes a population had patients selected both because of older age and race/ethnicity); in these cases, we tried to group the intervention by the primary disparity targeted by the intervention. Such overlap, however, complicates the attribution of those outcomes to the intervention effect for a particular disparity group.

Second, the definitions and categorization of the disparity groups continue to evolve, making the area at risk of inconsistent terminology. As a result, the comprehensive search for relevant literature for an area (e.g., gender disparity or difficulty communicating in a secondary language) can be challenging, and it is possible that some relevant eligible literature was missed. Ideally, KI input, peer review, and public comment can help address this limitation. Similarly, this technical brief was limited to seven disparity groups, but there are clearly others that were not addressed, such as the incarcerated SMI population.

Third, this Technical Brief used a very broad definition of SMI. Per the Federal Government,⁹ SMI is defined as the presence of a diagnosable mental illness, per the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV), that results in serious functional impairment (excluding substance use and developmental disorders).⁹ However, we could not use degree of functional impairment as part of our criteria, because the available literature does not provide this information, and even this definition will have to be updated to accommodate the recently released DSM-V.

Finally, because the focus of this Technical Brief was on groups with SMI, literature addressing the SMI population, as a whole, in comparison to the general population did not meet our inclusion criteria, thus was not reviewed. However, interventions to address the disparity between individuals with and without SMI was clearly cited as an important need, both by KIs and in the literature.⁵⁸ Indeed, the literature establishes overall decreased life expectancy (in some studies up to 25 years) for individuals with SMI,^{58,84} in comparison to the general population, and the American Psychiatric Association (APA) has now released a position statement on the role of psychiatrists in reducing physical health disparities.^{85,86}

Only one study compared findings in a SMI disparity group with patients in the SMI majority group (white race, not low income). Therefore, we have virtually no information concerning whether the available interventions that improved outcomes did so to a sufficient degree to equalize groups. We also cannot know if the tested approaches (such as additional support and ancillary services) might be useful for larger groups of the SMI population.

Future Areas of Research

The gaps in the evidence base noted above provide a framework for potential areas of future research. In terms of disparity groups, the gaps highlight the need for interventions focused on the LGBT and elderly SMI populations, in addition to research within specific racial/ethnic minorities. As data from the newly released 2014 National Survey on Drug Use and Health are further analyzed, we will have more current estimates of racial/ethnic differences in mental health service use to further characterize specific areas of need. More diversity of studied

interventions is also called for, such as examining the effectiveness of peer-based interventions in reducing disparities among individuals with SMI⁷⁰ and the use of culturally informed behavioral intervention technologies (i.e., Web sites, virtual reality, and mobile-based applications).⁸⁷ Furthermore, given preliminary effectiveness data for particular types of interventions, additional research focused on telepsychiatry, collaborative care, and culturally adapted therapies, across the diagnostic spectrum, within the SMI population (i.e., telepsychiatry for not only depressive and anxiety disorders, but also psychotic disorders) is warranted.

The identified gaps also emphasize the need for additional research along the continuum of health care outcomes, particularly in access to health care coverage and accurate diagnostic evaluation. In the future, we can assume that health care reform (broadly understood) and health insurance (more particularly focused on employer-based insurance, Medicare, Medicaid, and the Patient Portability and Affordable Care Act) will be active areas of research. Some studies on these topics might well address various kinds of disparities or mental health population groups defined either by specific SMI diagnosis or by sociodemographic characteristics. Moreover, KIs mentioned additional projects related to homelessness and disability that have yet to appear in the literature. One example is the SOAR initiative of the North Carolina Coalition to End Homelessness (the SSI/SSDI Outreach, Access and Recovery program of SAMHSA). It is intended to help individuals who are homeless and disabled by their mental health condition to obtain disability benefits (<http://www.ncceh.org/ncsoar/>).

In addition to future research suggested by evidence gaps, the literature specifically identified areas for future research. Some of these ideas overlapped with those pointed out by our KIs. Examples include the need to study larger samples of minority elderly patients with SMI, in terms of both examining comparative effectiveness of psychotherapy versus pharmacotherapy,²⁵ and engaging elderly people with very low incomes who do not have basic services such as transportation or telephones.⁸⁸ Many articles echoed the need for studies of all disparity groups with larger, more representative samples, over longer time periods, and in various settings, both in terms of geography and clinical setting type.^{25,27,33,41,77} Other investigators mentioned the need for RCTs of various interventions, rather than other, less rigorous study designs,⁵⁷ even though some authors noted the difficulty of enrolling and retaining these patients in a trial.⁵⁹ Yet others highlighted the importance of studies of cost-effectiveness of specific interventions.^{24,53} KIs and the literature mentioned some research projects currently under way that will hopefully shed additional light on these topics. One such project, the Cultural Formulation Interview Project,^{89,90} focuses on helping clinicians include cultural factors in their psychiatric assessments. This interview is, in fact, included in the emerging measures and models section of the DSM-V.⁹¹ KIs mentioned ongoing research in the use of interpreters (e.g., how interpreter services compare and contrast with bilingual clinicians) and the use of video interpretation. Another study protocol identified in the literature describes a collaborative planning intervention to improve the physical health of Latino individuals with SMI who are at risk for cardiovascular disease.⁷³ KIs also mentioned the development of mobile behavioral health technologies that have yet to be formally studied.

For all areas of future research, it is important to consider whether the correct outcomes have been measured in existing research and which outcomes should be addressed going forward. Housing outcomes were well represented in the literature included in this Technical Brief, as well as health care service use; adherence to treatment, including medication; and various measures of symptom reduction. There was also some mention of cost and quality of life outcomes. With the exception of the PCARE study,⁵⁸ there were no studies included in the

literature that examined physical health outcomes, which is an important need for the SMI population. Thus, in general, the correct outcomes are being measured with simply a need for more of the same and an increased focus on physical health outcomes, including mortality. However, it is worth noting that experts in mental health disparities research have also recommended involving multiple stakeholders when determining the most important outcomes for future research, including consumers.⁹²

Implications and Next Steps

The findings of this Technical Brief point to several next steps for the research community, policymakers, and patient advocates.

1. Establish a consistent definition of SMI across stakeholders to facilitate future research.

As mentioned previously, we used a broad definition of SMI, based on the intent of the topic nominator. Thus, we included a wide range of diagnostic categories and range of severity—from dysthymia (as a milder form of depression) or anxiety to bipolar or psychotic disorders. Even with such a broad scope, we identified relatively few interventions, and there is not yet a large enough body of evidence to allow for assessments of comparative effectiveness. Given the fact that there are several different definitions of SMI in use, the first logical step in conducting future research would be to reach a consensus definition for SMI across stakeholders so that studies will be homogeneous enough to be considered replications, allowing for meaningful comparisons and combined results through meta-analyses. Including the degree of functional impairment in the definition of SMI would be useful (as some definitions currently do), given that it would be presumably correlated with both direct and indirect costs to both the individual and society. It is worth noting, however, that the higher the degree of impairment, the more a sample would be composed of individuals with lower income and public health insurance, by virtue of having more individuals meeting Federal criteria for disability. In addition, obtaining a consensus definition across a broad range of stakeholders, one that includes not only researchers but also consumers and patient advocates, is necessary for wide and successful implementation of interventions once proven effective in smaller study samples.

2. Consider whether SMI is a disparity group in and of itself and how this affects future study design.

Indeed, SMI may be a particularly large health disparity (in the United States) given the stark data showing reduced life expectancy. As further support for this concept, a 2015 meta-analysis estimated that approximately 8 million deaths worldwide each year are attributable to mental disorders.⁹³ Unfortunately, although there is general agreement that there is a large mortality gap between individuals with SMI and the general population, the distribution based on race, ethnicity, or other disparity groups within the SMI population is not yet clear. Nonetheless, such information is sorely needed to design interventions so that they have the greatest effect on reducing the mortality gap.

3. Conduct more disparity research in mental health.

The findings of this Technical Brief make it abundantly clear that more funding needs to be allocated to disparity research in the area of mental health. Many promising interventions exist, such as collaborative care, telepsychiatry, and various case management strategies and therapies.

However, there is still an overall paucity of interventions to reduce disparities among individuals with SMI. Furthermore, some groups, such as the LGBT population, and some points along the health care continuum, such as access to accurate diagnosis, have been left out completely. Moreover, despite clear evidence that disparities exist, there is a lack of research comparing SMI disparity groups directly to the majority group to determine whether interventions equalize the two groups. There is a need for all of these questions to be answered. This research can be accomplished by conducting more primary studies of different interventions across disparity and diagnostic groups or by conducting large enough studies of general SMI interventions to allow for disparity group sub-analyses. Ideally, future research would comprise some combination of both approaches.

Conclusions

We sought to identify promising interventions that would improve access, quality, and outcomes among individuals with SMI who, because of their demographic characteristics, are at greater risk for poorer outcomes than others with SMI. We found a number of promising interventions mainly focused on economically disadvantaged individuals, including homeless individuals and racial or ethnic minority disparity groups. Depressive and psychotic disorders are the most targeted diagnoses in the interventions seeking to address disparities in SMI.

The most salient intervention enhancements included the use of collaborative care; intensive case management approaches, such as CTI and ACT; and specific culturally adapted therapies, including those involving families of individuals with SMI. Telepsychiatry also appears to be a promising intervention, and there is ongoing research in this area as well as other behavioral health technologies, which will hopefully enhance access and adherence to treatment. However, we did not find that these types of interventions were widely applied across groups, and many gaps remain, both in terms of the diversity of disparity groups (particularly individuals who identify as LGBT and the elderly) and approaches that were considered.

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84. Gill KJ, Murphy AA, Zechner MR, et al. Co-Morbid Psychiatric and Medical Disorders: Challenges and Strategies. *J Rehabil*. 2009;75(3):32-40. PMID: 45463596.
85. Moran M. Board Approves Statement on Role in Reducing Physical Health Disparities. *Psychiatr News*. 2015 September;50(18).
86. American Psychiatric Association. Position Statement on the Role of Psychiatrists in Reducing Physical Health Disparities in Patients with Mental Illness. American Psychiatric Association; 2015 May. Accessed October 26, 2015.
87. Burns MN, Montague E, Mohr DC. Initial design of culturally informed behavioral intervention technologies: developing an mHealth intervention for young sexual minority men with generalized anxiety disorder and major depression. *J Med Internet Res*. 2013;15(12):e271. Epub: 2013/12/07. PMID: 24311444.
88. Cunningham M, Zayas LH. Reducing depression in pregnancy: designing multimodal interventions. *Soc Work*. 2002 Apr;47(2):114-23. Epub: 2002/05/22. PMID: 12019798.
89. Lewis-Fernandez R, Aggarwal NK, Baarnhielm S, et al. Culture and psychiatric evaluation: operationalizing cultural formulation for DSM-5. *Psychiatry*. 2014 Summer;77(2):130-54. Epub: 2014/05/29. PMID: 24865197.
90. Aggarwal NK, Desilva R, Nicasio AV, et al. Does the Cultural Formulation Interview for the fifth revision of the diagnostic and statistical manual of mental disorders (DSM-5) affect medical communication? A qualitative exploratory study from the New York site. 2014/11/06 ed., Personal communications with; 2015.
91. American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-5. Washington, DC: American Psychiatric Association; 2013.
92. Dixon L, Lewis-Fernandez R, Goldman H, et al. Adherence disparities in mental health: opportunities and challenges. *J Nerv Ment Dis*. 2011 Oct;199(10):815-20. Epub: 2011/10/04. PMID: 21964279.
93. Walker ER, McGee RE, Druss BG. Mortality in mental disorders and global disease burden implications: a systematic review and meta-analysis. *JAMA Psychiatry*; 2015. p. 334-41.

Appendix A. Original Guiding Questions from Study Protocol

1. From available evidence and input from Key Informants (KIs): Describe interventions (types or modalities) to reduce disparities among SMI subgroups. Interventions may address one or more of the following concerns within an SMI subgroup: (a) access to accurate diagnostic evaluation; (b) access to health care, including health care coverage; (c) improving quality of health care; and (d) improving adherence to treatment, response to treatment, or other health outcomes.
 - a. What are the goals of the interventions?
 - b. What are the components of the interventions?
 - c. What are the outcomes of the interventions?
 - d. What disparity subgroups are the focus of the interventions?
 - e. What are other key characteristics of the disparity subgroups who are eligible for each of the interventions (e.g., age; type, stage, or severity of the SMI condition; or other risk-stratification issues)?
 - f. What is the level of staffing and qualifications of staff required (including background, training, and/or necessary certification)?
 - g. What are the potential advantages of this type of intervention when compared with other types of interventions or with usual care?
 - h. What are the potential disadvantages of these types of interventions, including safety issues and harms?
2. From available evidence and input from KIs: Describe the context for each intervention (type or modality) identified in GQ 1 to reduce disparities among SMI subgroups. Intervention may address one or more of the following concerns: (a) access to accurate diagnostic evaluation; (b) access to health care, including health care coverage; (c) improving quality of health care; and (d) improving response to treatment, adherence to treatment, or other health outcomes.
 - a. What is the setting for the intervention; in particular, what is the structure, components, and/or characteristics of the organization(s) providing the intervention?
 - b. What other responsibilities do the health professionals (including clinicians) participating in the intervention have for the medical and mental health care of patients with SMI, including transitions of patients from inpatient to outpatient care and vice versa?
 - c. What other resources (e.g., health information technology) are needed to provide the intervention?
 - d. Does successful implementation of this intervention require changes/cooperation/integration by other service providers?

3. From available evidence: Describe the current evidence about the effectiveness (or comparative effectiveness) of interventions that have been implemented to reduce disparities among SMI subgroups. Interventions may address one or more of the following concerns: (a) access to accurate diagnostic evaluation; (b) access to health care, including health care coverage; (c) improving quality of health care; and (d) improving adherence to treatment, response to treatment, or other health outcomes. Data on a specific intervention will optimally include:
 - a. Patient inclusion criteria
 - b. Type of intervention
 - c. Intervention design and size
 - d. Comparator intervention(s) used in comparative effectiveness evaluations
 - e. Length of followup
 - f. Outcomes
 - g. Types of health care professionals providing services in the intervention or targeted by the intervention
 - h. Concurrent and prior treatment
 - i. Setting of the intervention
 - j. Costs and resource used in providing the intervention
 - k. Payment considerations (such as availability of insurance coverage)
4. From available evidence and input from KIs, identify gaps in knowledge and future research needs:
 - a. Are any interventions to address disparities among SMI subgroups planned by researchers, clinicians, patient advocacy groups, or others but not yet implemented?
 - b. In current interventions, are the correct outcomes being measured? Are relevant outcomes being measured with appropriate instruments and data?
 - c. What gaps exist in the evidence base for best practices or interventions for addressing disparities in SMI?
 - d. What are possible areas of future research?
 - e. What are potential long-term (10-year +) developments in this field?

Appendix B. Literature Search and Yields

PubMed Original Search, 4/8/2015:

Search	Query	Items Found
#1	Search (((("Mood Disorders"[Mesh] OR "Schizophrenia and Disorders with Psychotic Features"[Mesh] OR Depression[Mesh] OR ((("Depressive Disorder, Major"[Mesh]) OR "Anxiety Disorders"[Mesh]) OR "Eating Disorders"[Mesh] OR "Personality Disorders"[Mesh] OR ((severe OR serious OR persistent) mental illness[Text Word]))))	382729
#2	Search ((((((("Cultural Competency"[Mesh]) OR ("Healthcare Disparities"[Mesh] OR "Health Status Disparities"[Mesh]))) OR ((((((("Minority Groups"[Mesh]) OR "Sexism"[Mesh]) OR ("Discrimination (Psychology)"[Mesh] OR "Social Discrimination"[Mesh] OR "Ageism"[Mesh] OR "Racism"[Mesh])) OR "Rural Population"[Mesh]) OR ("Socioeconomic Factors"[Mesh] OR "Social Class"[Mesh])) OR "Sexual Behavior"[Mesh])))) OR ((("Homeless Persons"[Mesh]) OR "African Americans"[Mesh])) OR ((("Homosexuality"[Mesh]) OR "Transgendered Persons"[Mesh]))	512136
#3	Search (#1 AND #2)	26654
#12	Search ((("Intervention Studies"[Mesh] OR "Crisis Intervention"[Mesh] OR intervention)) OR ((("Program Development"[Mesh] OR "Program Evaluation"[Mesh]) OR "Health Services Research"[Mesh]) OR ("Evidence-Based Medicine"[Mesh] OR "Evidence-Based Practice"[Mesh] OR "Decision Support Techniques"[Mesh]))	665190
#13	Search (#3 AND #12)	2769
#14	Search (#3 AND #12) Filters: Humans	2766
#15	Search (#3 AND #12) Filters: Humans; English	2654
#16	Search (#3 AND #12) Filters: Publication date from 1980/01/01; Humans; English	2610
#19	Search ((("United States"[Mesh] OR "United States Government Agencies"[Mesh]) OR "United States Dept. of Health and Human Services"[Mesh]) OR "Research Support, U.S. Gov't, P.H.S." [Publication Type]	3228942
#20	Search (#16 AND #19) Filters: Publication date from 1980/01/01; Humans; English	1217

Original searches in the following databases were conducted on 4/8/2015; the only limit was publication date from 1/1/1980. Publications were not limited to the United States.

Database	Query	Items Found
Cochrane Reviews	(severe OR serious OR persistent) mental illness AND ("cultural competency" OR disparities OR disparity OR racism OR sexism OR discrimination OR ageism)	7
Cochrane Clinical Trial Registry	(severe OR serious OR persistent) mental illness AND ("cultural competency" OR disparities OR disparity OR racism OR sexism OR discrimination OR ageism)	8
PsycINFO	(severe OR serious OR persistent) mental illness AND ("cultural competency" OR disparities OR disparity OR racism OR sexism OR discrimination OR ageism)	268
CINAHL	(severe OR serious OR persistent) mental illness AND ("cultural competency" OR disparities OR disparity OR racism OR sexism OR discrimination OR ageism)	93
ProQuest Psychology Journals	(severe OR serious OR persistent) mental illness AND ("cultural competency" OR disparities OR disparity OR racism OR sexism OR discrimination OR ageism)	119
Academic Search Premier	(severe OR serious OR persistent) mental illness AND ("cultural competency" OR disparities OR disparity OR racism OR sexism OR discrimination OR ageism)	164
ClinicalTrials.gov	(severe OR serious OR persistent) mental illness AND ("cultural competency" OR disparities OR disparity OR racism OR sexism OR discrimination OR ageism)	9

Original searches in the following databases were conducted on 6/3/2015; the only limit was publication date from 1/1/1980. Publications were not limited to the United States.

Database	Query	Items Found
OpenSIGLE	(severe OR serious OR persistent) mental illness AND ("cultural competency" OR disparities OR disparity OR racism OR sexism OR discrimination OR ageism)	1
NIH RePORTER	(severe OR serious OR persistent) mental illness AND ("cultural competency" OR disparities OR disparity OR racism OR sexism OR discrimination OR ageism)	10
National Quality Measures Clearinghouse	(severe OR serious OR persistent) mental illness AND ("cultural competency" OR disparities OR disparity OR racism OR sexism OR discrimination OR ageism)	10
The Joint Commission	(severe OR serious OR persistent) mental illness AND ("cultural competency" OR disparities OR disparity OR racism OR sexism OR discrimination OR ageism)	0

An original search in the following database was conducted on 6/4/2015; the only limit was publication date from 1/1/1980. Publications were not limited to the United States.

Database	Query	Items Found
National Guidelines Clearinghouse	(severe OR serious OR persistent) mental illness AND (“cultural competency” OR disparities OR disparity OR racism OR sexism OR discrimination OR ageism)	4

Update searches in the following databases were conducted on 7/1/2015 using the same queries outlined above. The number of new citations (since the original searches) found is provided below.

Database	New Items Found
PubMed	3
Cochrane Reviews	0
Cochrane Clinical Trial Registry	0
PsycINFO	4
CINAHL	0
ProQuest Psychology Journals	11
Academic Search Premier	3
ClinicalTrials.gov	1
OpenSIGLE	0
NIH RePORTER	1
National Quality Measures Clearinghouse	0
The Joint Commission	0
National Guidelines Clearinghouse	1

A search in PubMed was performed on 8/31/2015 using MeSH headings, “Hispanic Americans,” “Asian Americans,” and “Indians, North Americans” in addition to the search terms outlined above for the original PubMed search:

#39	Search ((((((“Mood Disorders”[Mesh] OR “Schizophrenia and Disorders with Psychotic Features”[Mesh] OR Depression[Mesh] OR ((“Depressive Disorder, Major”[Mesh]) OR “Anxiety Disorders”[Mesh]) OR “Eating Disorders”[Mesh] OR “Personality Disorders”[Mesh] OR ((severe OR serious OR persistent) mental illness[Text Word])))))))) AND (((“Intervention Studies”[Mesh] OR “Crisis Intervention”[Mesh] OR intervention)) OR ((“Program Development”[Mesh] OR “Program Evaluation”[Mesh]) OR “Health Services Research”[Mesh]) OR (“Evidence-Based Medicine”[Mesh] OR “Evidence-Based Practice”[Mesh] OR “Decision Support Techniques”[Mesh]))) AND (((“United States”[Mesh] OR “United States Government Agencies”[Mesh]) OR “United States Dept. of Health and Human Services”[Mesh]) OR “Research Support, U.S. Government” [Publication Type])	7253
#43	Search ((“Hispanic Americans”[Mesh]) OR “Asian Americans”[Mesh]) OR “Indians, North American”[Mesh]	38150
#44	Search (#39 AND #43)	267
#45	Search ((((((“Cultural Competency”[Mesh]) OR (“Healthcare Disparities”[Mesh] OR “Health Status Disparities”[Mesh]))) OR ((((((“Minority Groups”[Mesh]) OR “Sexism”[Mesh]) OR (“Discrimination (Psychology)”[Mesh] OR “Social Discrimination”[Mesh] OR “Ageism”[Mesh] OR “Racism”[Mesh])) OR “Rural Population”[Mesh]) OR (“Socioeconomic Factors”[Mesh] OR “Social Class”[Mesh])) OR “Sexual	523968

	Behavior"[Mesh])) OR ((("Homeless Persons"[Mesh]) OR "African Americans"[Mesh])) OR ("Homosexuality"[Mesh]) OR "Transgendered Persons"[Mesh])	
#46	Search (#44 NOT #45)	116
#50	Search (#46 AND #47) Filters: Humans; English	116

Appendix C. Gray Literature Search Methodology

Sources for the gray literature included the following:

- **OpenSIGLE:** Operated by GreyNet, the OpenSIGLE Repository preserves and makes openly accessible research results originating in the International Conference Series on Grey Literature. GreyNet together with the Institute for Scientific and Technical Information-National Center for Scientific Research designed the format for a metadata record, which encompasses standardized PDF attachments for full-text conference preprints, PowerPoint presentations, abstracts, and biographical notes. All 11 volumes (1993–2009) of the Grey Literature Conference Proceedings are available in the OpenSIGLE Repository.
- **ClinicalTrials.gov:** ClinicalTrials.gov offers up-to-date information for locating federally and privately supported clinical trials for a wide range of diseases and conditions. The site contains approximately 12,400 clinical studies sponsored by the National Institutes of Health, other federal agencies, and private industry. Studies listed in the database are conducted in all 50 states and in more than 100 countries.
- **Academic Search Complete:** This source provides information from a wide range of academic areas, including business, social sciences, humanities, general academic, general science, education, and multicultural topics. This multidisciplinary database features full text for more than 4,000 journals with many dating back to 1975, abstracts and indexing for more than 8,200 scholarly journals, and coverage of selected newspapers and other news sources.
- **NIH RePORTER:** The information found in RePORTER is drawn from several extant databases (eRA databases, Medline®, PubMed Central, the NIH Intramural Database, and iEdison), using newly formed linkages among these disparate data sources.

We also searched Web sites of the National Guidelines Clearinghouse, the National Quality Measures Clearinghouse, and The Joint Commission.

Appendix D. Key Informant Interview Methodology

We adhered to the Office of Management and Budget (OMB) requirements and limited standardized question (the list of Guiding Questions [GQs]) to no more than 9 nongovernment-associated individuals. As a result, we did not need to obtain OMB clearance for the interviews.

After review and approval of the completed Disclosure Forms for Conflicts of Interest for the proposed Key Informants (KIs) by the Agency for Healthcare and Quality (AHRQ), we conducted interviews with six selected KIs on three calls; the number of KIs on each call was two, one, and three, respectively. The interviews were a combination of individual KIs based on availability and concordance of perspectives. The Technical Brief's Scientific Director from the Evidence-based Practice Center (EPC), a psychiatrist, led two of the KI interviews; a Co-Investigator from the EPC for this Technical Brief, also a psychiatrist, led one of the interviews. The Task Order Officer (TOO) was in attendance for two of the three discussions, along with other EPC team members who would be authors on the Technical Brief. The KI interviews were one hour each.

Project staff from DESA, Inc., a professional services firm, were also in attendance for the three KI interviews; xxx, Inc. is a small-, minority-, and women-owned business. DESA, Inc. provided professional and extensive notes, similar to transcription, for each interview following the calls. The professional notes, along with summary notes and a summary of findings from all KI interviews, were submitted to the TOO for documentation. Authors identified any unique perspectives from KIs that were not part of the literature review findings.

Appendix E. Excluded Studies

Exclusion Codes:

- X0-Irretrievable publication
- X1-Ineligible publication type: Not published in English
- X2-Ineligible publication: Published prior to 1980
- X3-Ineligible setting: Non-US
- X4-Ineligible setting: Not inpatient or outpatient, primary care or mental health care setting
- X5-Ineligible population: Too young, all participants are <18 years of age
- X6-Ineligible population: Does not focus on individuals with SMI now or in the past year
- X7-Ineligible population: Does not focus on a disparity group with SMI
- X8-Ineligible intervention: No intervention(s)
- X9-Ineligible comparator: Ineligible or no comparator(s)
- X10-Ineligible outcome: Ineligible or no outcome(s)

1. Adams CE, Rash CJ, Burke RS, et al. Contingency Management for Patients with Cooccurring Disorders: Evaluation of a Case Study and Recommendations for Practitioners. *Case Reports in Psychiatry*. 2012;1-7. PMID: 86827569. Exclusion Code: X6
2. Aggarwal NK, Desilva R, Nicasio AV, et al. Does the Cultural Formulation Interview for the fifth revision of the diagnostic and statistical manual of mental disorders (DSM-5) affect medical communication? A qualitative exploratory study from the New York site. *Ethn Health*. 2014/11/06 ed; 2015. p. 1-28. Exclusion Code: X6
3. Aggarwal NK, Nicasio AV, DeSilva R, et al. Barriers to implementing the DSM-5 cultural formulation interview: a qualitative study. *Cult Med Psychiatry*. 2013 Sep;37(3):505-33. PMID: 23836098. Exclusion Code: X6
4. Aguilar-Gaxiola SA, Zelezny L, Garcia B, et al. Translating research into action: reducing disparities in mental health care for Mexican Americans. *Psychiatr Serv*. 2002 Dec;53(12):1563-8. PMID: 12461216. Exclusion Code: X8
5. Alegria M, Carson N, Flores M, et al. Activation, self-management, engagement, and retention in behavioral health care: a randomized clinical trial of the DECIDE intervention. *JAMA Psychiatry*. 2014 May;71(5):557-65. PMID: 24647680. Exclusion Code: X6
6. Alegria M, Polo A, Gao S, et al. Evaluation of a patient activation and empowerment intervention in mental health care. *Med Care*. 2008 Mar;46(3):247-56. PMID: 18388839. Exclusion Code: X6
7. Alexander MJ, Haugland G, Ashenden P, et al. Coping with thoughts of suicide: Techniques used by consumers of mental health services. *Psychiatr Serv*. 2009;60(9):1214-21. PMID: 2009-18465-008. Exclusion Code: X7
8. Alvidrez J, Arean PA, Stewart AL. Psychoeducation to increase psychotherapy entry for older African Americans. *Am J Geriatr Psychiatry*. 2005 Jul;13(7):554-61. PMID: 16009731. Exclusion Code: X6
9. Amirkhanian YA, Kelly JA, McAuliffe TL. Psychosocial needs, mental health, and HIV transmission risk behavior among people living with HIV/AIDS in St Petersburg, Russia. *AIDS*. 2003 Nov 7;17(16):2367-74. PMID: 14571189. Exclusion Code: X3
10. Arnold JG, Miller AL, Canive JM, et al. Comparison of outcomes for African Americans, Hispanics, and Non-Hispanic Whites in the CATIE study. *Psychiatr Serv*. 2013 Jun;64(6):570-8. PMID: 23494108. Exclusion Code: X8

11. Aviera A. "Dichos" therapy group: a therapeutic use of Spanish language proverbs with hospitalized Spanish-speaking psychiatric patients. *Cult Divers Ment Health*. 1996;2(2):73-87. PMID: 9225563. Exclusion Code: X9
12. Baker-Ericzen MJ, Connelly CD, Hazen AL, et al. A collaborative care telemedicine intervention to overcome treatment barriers for Latina women with depression during the perinatal period. *Fam Syst Health*. 2012 Sep;30(3):224-40. PMID: 22709321. Exclusion Code: X6
13. Balan IC, Moyers TB, Lewis-Fernandez R. Motivational pharmacotherapy: combining motivational interviewing and antidepressant therapy to improve treatment adherence. *Psychiatry*. 2013 Fall;76(3):203-9. PMID: 23965260. Exclusion Code: X6
14. Bao Y, Alexopoulos GS, Casalino LP, et al. Collaborative depression care management and disparities in depression treatment and outcomes. *Arch Gen Psychiatry*. 2011 Jun;68(6):627-36. PMID: 21646579. Exclusion Code: X6
15. Bartels SJ. Commentary: the forgotten older adult with serious mental illness: the final challenge in achieving the promise of Olmstead? *J Aging Soc Policy*. 2011 Jul-Sep;23(3):244-57. PMID: 21740200. Exclusion Code: X9
16. Bartels SJ. Can behavioral health organizations change health behaviors? The STRIDE study and lifestyle interventions for obesity in serious mental illness. *The American Journal of Psychiatry*. 2015;172(1):9-11. PMID: 2015-02706-004. Exclusion Code: X7
17. Bartels SJ, Aschbrenner KA, Rolin SA, et al. Activating older adults with serious mental illness for collaborative primary care visits. *Psychiatr Rehabil J*. 2013 Dec;36(4):278-88. PMID: 24219769. Exclusion Code: X9
18. Bartels SJ, Naslund JA. The underside of the silver tsunami--older adults and mental health care. *N Engl J Med*. 2013 Feb 7;368(6):493-6. PMID: 23343039. Exclusion Code: X8
19. Bartels SJ, Pepin R, Gill LE. The Paradox of Scarcity in a Land of Plenty: Meeting the Needs of Older Adults with Mental Health and Substance Use Disorders. *Generations*. 2014 Fall;38(3):6-13. PMID: 25663741. Exclusion Code: X8
20. Bartels SJ, Pratt SI, Mueser KT, et al. Long-term outcomes of a randomized trial of integrated skills training and preventive healthcare for older adults with serious mental illness. *Am J Geriatr Psychiatry*. 2014 Nov;22(11):1251-61. PMID: 23954039. Exclusion Code: X7
21. Bartels SJ, Pratt SI, Mueser KT, et al. Integrated IMR for psychiatric and general medical illness for adults aged 50 or older with serious mental illness. *Psychiatr Serv*. 2014 Mar 1;65(3):330-7. PMID: 24292559. Exclusion Code: X7
22. Baumgartner JN, Herman DB. Community integration of formerly homeless men and women with severe mental illness after hospital discharge. *Psychiatr Serv*. 2012;63(5):435-7. PMID: 22549529. Exclusion Code: X7
23. Bayard-Cooks R. Momma's story: An exploratory case study of Black mothers' experiences caring for a son with a severe mental illness and history of incarceration. US: ProQuest Information & Learning; 2012. Exclusion Code: X0
24. Beach SR, Brody GH, Kogan SM, et al. Change in caregiver depression in response to parent training: genetic moderation of intervention effects. *J Fam Psychol*. 2009 Feb;23(1):112-7. PMID: 19203166. Exclusion Code: X5
25. Beeber LS. A clinical translation of the research article titled, 'exploring the impact of race on mental health service utilization among African Americans and whites with severe mental illness'. *J Am Psychiatr Nurses Assoc*. 2010;16(2):90-2. PMID: 2010-07453-003. Exclusion Code: X8
26. Beeber LS, Cooper C, Van Noy BE, et al. Flying under the radar: engagement and retention of depressed low-income mothers in a mental health intervention. *ANS Adv Nurs Sci*. 2007 Jul-Sep;30(3):221-34. PMID: 17703122. Exclusion Code: X6

27. Beeber LS, Holditch-Davis D, Belyea MJ, et al. In-home intervention for depressive symptoms with low-income mothers of infants and toddlers in the United States. *Health Care Women Int.* 2004 Jun-Jul;25(6):561-80. PMID: 15354622. Exclusion Code: X6
28. Belcher JR. Defining the service needs of homeless mentally ill persons. *Hosp Community Psychiatry.* 1988 Nov;39(11):1203-5. PMID: 3224957. Exclusion Code: X8
29. Belcher JR. The homeless mentally ill and the need for a total care environment. *Can J Psychiatry.* 1989 Apr;34(3):186-9. PMID: 2720551. Exclusion Code: X8
30. Bell MD, Lysaker PH. Clinical benefits of paid work activity in schizophrenia: 1-year followup. *Schizophr Bull.* 1997;23(2):317-28. PMID: 9165640. Exclusion Code: X7
31. Bluthenthal RN, Jones L, Fackler-Lowrie N, et al. Witness for Wellness: preliminary findings from a community-academic participatory research mental health initiative. *Ethn Dis.* 2006 Winter;16(1 Suppl 1):S18-34. PMID: 16681126. Exclusion Code: X4
32. Bogner HR, de Vries HF. Integrating type 2 diabetes mellitus and depression treatment among African Americans: a randomized controlled pilot trial. *Diabetes Educ.* 2010 Mar-Apr;36(2):284-92. PMID: 20040705. Exclusion Code: X6
33. Bond GR, Becker DR, Drake RE, et al. Implementing supported employment as an evidence-based practice. *Psychiatr Serv.* 2001 Mar;52(3):313-22. PMID: 11239097. Exclusion Code: X8
34. Breland-Noble AM. Community and treatment engagement for depressed African American youth: the AAKOMA FLOA pilot. *J Clin Psychol Med Settings.* 2012 Mar;19(1):41-8. PMID: 22354616. Exclusion Code: X5
35. Breland-Noble AM, Bell C, Nicolas G. Family first: the development of an evidence-based family intervention for increasing participation in psychiatric clinical care and research in depressed African American adolescents. *Fam Process.* 2006 Jun;45(2):153-69. PMID: 16768016. Exclusion Code: X5
36. Burns MN, Montague E, Mohr DC. Initial design of culturally informed behavioral intervention technologies: developing an mHealth intervention for young sexual minority men with generalized anxiety disorder and major depression. *J Med Internet Res.* 2013;15(12):e271. PMID: 24311444. Exclusion Code: X4
37. Burt MR, Pearson C, Montgomery AE. Community-wide strategies for preventing homelessness: recent evidence. *J Prim Prev.* 2007 Jul;28(3-4):213-28. PMID: 17558555. Exclusion Code: X7
38. Cabassa LJ, Druss B, Wang Y, et al. Collaborative planning approach to inform the implementation of a healthcare manager intervention for Hispanics with serious mental illness: a study protocol. *Implement Sci.* 2011;6:80. PMID: 21791070. Exclusion Code: X4
39. Cabassa LJ, Hansen MC, Palinkas LA, et al. Azucar y nervios: explanatory models and treatment experiences of Hispanics with diabetes and depression. *Soc Sci Med.* 2008 Jun;66(12):2413-24. PMID: 18339466. Exclusion Code: X6
40. Calsyn RJ. A modified ESID approach to studying mental illness and homelessness. *Am J Community Psychol.* 2003 Dec;32(3-4):319-31. PMID: 14703267. Exclusion Code: X4
41. Campbell K, Bond GR, Drake RE. Who benefits from supported employment: a meta-analytic study. *Schizophr Bull.* 2011 Mar;37(2):370-80. PMID: 19661196. Exclusion Code: X7
42. Carpenter-Song E, Whitley R, Lawson W, et al. Reducing disparities in mental health care: suggestions from the Dartmouth-Howard collaboration. *Community Ment Health J.* 2011;47(1):1-13. PMID: 2010921681. Language: English. Entry Date: 20110304. Revision Date: 20120210. Publication Type: journal article. Journal Subset: Biomedical. Exclusion Code: X8
43. Casas RN, Gonzales E, Aldana-Aragón E, et al. Toward the early recognition of psychosis among Spanish-speaking adults on both sides of the U.S.–Mexico border. *Psychol Serv.* 2014;11(4):460-9. PMID: 2014-45739-008. Exclusion Code: X6

44. Cassells A, Lin TJ. Collaborative Care to Reduce Depression and Increase Cancer Screening Among Low-Income Urban Women Project (Prevention Care Manager 3 Project) (PCM3). Clinical Directors Network. Bronx, New York: ClinicalTrials.gov; October 17, 2014 2014. Exclusion Code: X0
45. Chen FP, Ogden L. A working relationship model that reduces homelessness among people with mental illness. *Qual Health Res.* 2012 Mar;22(3):373-83. PMID: 21890715. Exclusion Code: X8
46. Chesney MA, Chambers DB, Taylor JM, et al. Coping effectiveness training for men living with HIV: results from a randomized clinical trial testing a group-based intervention. *Psychosom Med.* 2003 Nov-Dec;65(6):1038-46. PMID: 14645783. Exclusion Code: X6
47. Chinman MJ, Rosenheck R, Lam JA, et al. Comparing consumer and nonconsumer provided case management services for homeless persons with serious mental illness. *J Nerv Ment Dis.* 2000 Jul;188(7):446-53. PMID: 10919704. Exclusion Code: X9
48. Coccozza JJ, Steadman HJ, Dennis DL, et al. Successful systems integration strategies: the access program for persons who are homeless and mentally ill. *Adm Policy Ment Health.* 2000 Jul;27(6):395-407. PMID: 11077703. Exclusion Code: X9
49. Cole S, Reims K, Kershner L, et al. Improving care for depression: performance measures, outcomes and insights from the Health Disparities Collaboratives. *J Health Care Poor Underserved.* 2012 Aug;23(3 Suppl):154-73. PMID: 22864495. Exclusion Code: X7
50. Collado A, Long KE, MacPherson L, et al. The efficacy of a behavioral activation intervention among depressed US Latinos with limited English language proficiency: study protocol for a randomized controlled trial. *Trials.* 2014;15:231. PMID: 24938081. Exclusion Code: X10
51. Collins PY, Geller PA, Miller S, et al. Ourselves, our bodies, our realities: an HIV prevention intervention for women with severe mental illness. *J Urban Health.* 2001 Mar;78(1):162-75. PMID: 11368195. Exclusion Code: X7
52. Cook BL, Doksum T, Chen CN, et al. The role of provider supply and organization in reducing racial/ethnic disparities in mental health care in the U.S. *Soc Sci Med.* 2013 May;84:102-9. PMID: 23466259. Exclusion Code: X6
53. Correll JA, Cantrell P, Dalton WT. Integration of behavioral health services in a primary care clinic serving rural Appalachia: reflections on a clinical experience. *Fam Syst Health.* 2011 Dec;29(4):291-302. PMID: 22214296. Exclusion Code: X6
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Appendix F. Characteristics and Outcomes for Interventions for Disparity Groups

F-1

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Arean et al., 2005; ²⁵ Arean et al., 2007 ²⁶	Disparity group: Elderly, 60 years or older (mean age=71.2)	Improving Mood-Promoting Access to Collaborative Treatment (Impact) Study	Primary care based collaborative care: PCP education about evidence-based treatment of late-life depression	Usual care: care from PCP, any MH specialty provider of participant's choosing; or no receipt of any MH treatment at all.	Access to health care	Collaborative Care Intervention superior at 12 month followup:
Multisite RCT: 18 primary care sites	White, African American and Hispanic; poor and not poor analyzed separately	Compare primary care based collaborative care intervention to usual care for elderly with depression to address functional barriers to service use	Depression care manager who works with patient and primary care provider to activate patient in management of their depression		Utilization: use of antidepressant medications and psychotherapy	Improved use of services and all outcomes, in each race/ethnicity group (white, African American, and Latino) and both income groups.
Recruitment: 7/1999-8/2001	SMI:		Ongoing mood and medication monitoring based on evidence-based treatment guidelines		Quality of health care	
Randomized: N=1801	Current diagnosis of MDD or dysthymia, based on SCID		Brief psychotherapy (Problem-solving Treatment of Primary Care; PST-PC)		Satisfaction with depression care	Low-income group improved in physical functioning, but it took longer than higher income groups.
Length of intervention: 1 year	MDD and Dysthymia: 53%				Other health outcomes	
Followup: Telephone survey at 3, 6, and 12 months.	MDD:17%				Depression and health-related functional impairment	
	Dysthymia: 30%					

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post- Intervention Followup						
Arean et al., 2005; ²⁵ Arean et al., 2007 ²⁶ (continued)			Clinical information tracking system to assist care manager and PCP in making treatment decisions Ready access to a psychiatrist for consultation on complicated cases. Patient received 20- minute video and written information about late-life depression			

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post- Intervention Followup						
Arean et al., 2005; ²⁵ Arean et al., 2007 ²⁶ (continued)			Depression clinical specialist (DCS), typically a nurse or psychologist trained in the collaborative care model, reviewed educational materials and developed treatment plan with the patient; medication or course of PST-PC (monitoring every 2 weeks during acute phase and then monthly for 1 year after stabilization. If unsuccessful, other treatment options also explored. Few cultural accommodations made			

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Burt et al., 2012 ⁴³ Cohort compared with comparison group: retrospective data analysis with propensity score matching to controls in a state funded program Intervention (LA HOPE) N=56 Comparison: AB2034 participants during same period: N=415 Enrollment between July 2004, and May 2005. Followup data for 13 months or more.	Disparity group: Homeless or extremely high risk of homelessness SMI: Axis I diagnosis, usually schizophrenia or affective disorder (approach used for clinical diagnosis not specified).	To examine the impact of a federally funded housing and employment demonstration program for homeless adults with serious mental illness.	Los Angeles' Homeless Opportunity Providing Employment (LA's HOPE). LA's HOPE involved four public agencies and their contract service delivery programs. Technically, AB2034 participants but provided with greater assistance with housing and employment; case managers to help with securing employment.	Special state-funded program called AB2034: supportive services and housing assistance.	Other health outcomes Tenancy in permanent supportive Housing; Housing stability	Other health outcomes: LA's HOPE participants more days in supportive housing, more days housed. More days employed, greater likelihood of employment

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Chong, 2012 ²⁴ RCT CHC, Tucson, Arizona Recruitment 6/2008-10/2009 Randomized: N=167 Length of intervention: Monthly tele-psychiatry sessions at the CHC for 6 months No post-treatment followup	Disparity group: Low income, Hispanic, rural SMI: MDD diagnosed through MINI Low-income Hispanic patients	To evaluate the feasibility and acceptability of telepsychiatry for low-income Hispanic patients with MDD	Webcam telepsychiatry and medication Monthly telepsychiatry sessions at CHC provided by one of two Hispanic psychiatrists using an online virtual meeting program. Appointment were ½ hour Medication was based on the "Texas Medication Algorithm Project" strategies for treatment of nonpsychotic MDD.	Treatment as usual at the CHC included having one of several in-house MH specialists to whom the providers could refer patients if needed. Appointments for the mental health specialists tended to be for 1 hour	Access to health care Feasibility of implementing telepsychiatry program Antidepressant use Quality of health care Acceptability of telepsychiatry: appointment-keeping, visit satisfaction, working alliance with provider Satisfaction with care Other outcomes days lost, unproductive days	Appointment keeping through various measures, primary care and MH: no difference. Rating of working alliance with psychiatrist, visit satisfaction, antidepressant use: higher in telepsychiatry group Although depression severity decreased faster among telepsychiatry group, no differences found in overall depression score. Groups did not differ in number of days lost or unproductive due to depression. Although both groups reported willingness to pay for MH services provided by CHC, almost proportionately twice as many WEB patients were willing to pay for telepsychiatry

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Cooper 2013 ²⁷ Cluster RCT 10 urban community-based primary care clinics in Maryland and Delaware Recruitment: 6/2004-3/2006 PCPs: 36 randomized; 132 patients enrolled, Length of intervention NR; Followup time points at 6, 12, and 18 months after baseline	Disparity group: African American SMI: MDD through diagnostic interview	To evaluate the comparative effectiveness of standard and patient-centered, culturally tailored collaborative care for African-American patients with MDD Blacks Receiving Interventions for Depression and Gaining Empowerment Study: Blacks Receiving Interventions for depression and Gaining Empowerment Study	Patient-centered, culturally tailored collaborative care strategy: Delivered by PCP, consultation-liaison psychiatrist team, and female African-American depression case manager. Clinician received academic detailing visits, monthly newsletters, and a case-based, interactive multi-media CD-ROM communication skills training including interview with simulated patient, along with companion workbook and individualized feedback.	Standard collaborative care strategy: Delivered by a PCP, consultation-liaison psychiatrist team, and female Caucasian depression care manager. Clinician received academic detailing visits and monthly newsletters. Clinician intervention: didactic, disease-oriented approach.	Access to health care: Receipt of depression treatment Quality of care: Patient ratings of providers' skills Health outcomes: Depression symptom reduction and remission, MH functional status, adherence	Patients in both interventions: statistically significant improvements over 12 months in depression severity, similar reductions in depression symptom levels, improvement in mental health functioning scores, and odds of rating their clinician as participatory Treatment rates (taking anti-depressant medications) increased among standard but not patient-centered collaborative care patients Patient-centered collaborative care patients rated their care manager as more helpful at identifying their concerns and helping them adhere to treatment

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post- Intervention Followup						
Cooper 2013 ²⁷ (continued)			Patient intervention delivered by depression care manger: telephone followup, needs assessment, explored access barriers, and educational materials, used an individualized approach to guide engagement and supportive counseling and provided contact information for culturally sensitive psychotherapists as appropriate; provided with culturally targeted materials designed to address barriers to depression treatment.	Patient intervention: delivered by depression care manager included telephone followups, needs assessment, and generic depression educational materials		

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Druss et al., 2010 ⁵⁸	Disparity group: Economically disadvantaged	To provide results from the Primary Care Access, Referral, and Evaluation (PCARE) study examining the effect of a medical care management intervention designed to help overcome patient, provider, and system-level barriers to primary medical care management among persons with SMI who are receiving services in community mental health settings	Care Management intervention: two full-time registered nurses following a manualized protocol included: Patient barriers: provided information about medical conditions, available medical providers and upcoming appointments; Motivational interviewing; action plans with goals related to medical care or lifestyle changes. Provider barriers: communication conduit between patient and medical providers; patient coaching to promote more effective interactions with providers; Systems barriers: patients enrolled in insurance; given bus tokens	Usual care: patients provided with a list of contact information for local primary care medical clinics	<ul style="list-style-type: none"> Quality of health care indicated preventive services Sustainment of primary care Diagnosis of previously undiagnosed medical conditions Improving adherence or response to treatment <ul style="list-style-type: none"> Change in Framingham Cardiovascular Risk Index for patients with cardiometabolic condition(s) Other health outcomes <ul style="list-style-type: none"> Health-related quality of life 	<p>All outcomes after 12 months</p> <p>Intervention group received sig larger percentage of recommended preventive services, including physical exam activities, screening tests, educational interventions, & vaccinations</p> <p>Intervention group sig greater improvement in sustaining a primary source of care</p> <p>Among those with cardiometabolic conditions, intervention group sig greater increase in received services</p> <p>Intervention group sig higher scores in mental health quality of life outcome and no difference in physical health outcomes</p> <p>Intervention group had sig better scores on the Framingham Cardiovascular Risk Index</p>
RCT						
CMCH in Atlanta	SMI: Various diagnoses with or without a comorbid addictive disorder; Depression: 33%; Schizophrenia: 43%, bipolar disorder: 17%					
Recruitment: 9/2004-4/2007						
N=407						
Length of intervention: 12 months; evaluations at 6 and 12 months.						

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Fortney et al., 2014 ⁴⁹	Disparity group: Rural	Telemedicine outreach for PTSD (TOP) intervention	Off-site PTSD care team used telemedicine (e.g., telephone, interactive video, electronically shared medical records and intranet) to enhance care available on-site at CBOCS. Care manager for coordinating care, with followup every 2 weeks; 12 sessions of CPT through a telepsychiatrist	Usual care may include: pharmacotherapy from a PCP, psychiatric nurse practitioner, or counseling/groups from an on-site mid-level mental health specialist.	Access to health care Utilization of CPT and psychiatric care Prescribed PTSD medication Adherence or response to treatment PTSD severity Depression severity Medication adherence Other health outcomes Health-related quality of life	More patients randomized to TOP received CPT than usual care, no difference in medication use or adherence Patients randomized to TOP reported larger decreases in PTSD scores than patients randomized to usual care at both 6 and 12 months.
Multisite pragmatic RCT: 11 VA CBOCS	SMI: Current diagnosis of PTSD MDD: 79%	Compare collaborative care model designed to improve access to and engagement in evidence-based psychotherapy and pharmacotherapy to usual care. Goal is to support treatment provided by the VA's CBOCS that lack on-site psychiatrists				
Recruitment: 11/2009-9/2011	Other characteristics: Male veterans					
Randomized: N=265						
Length of intervention: 12 months						
Followup: 6 and 12 months						

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Herman et al., 2011 ³⁵ ; Tomita & Herman, 2012 ³⁶ ; Tomita & Herman, 2015 ³⁷ ; Tomita et al., 2014 ³⁸	Disparity group: Homeless	To evaluate the Critical Time Intervention (CTI), to reduce homelessness among individuals with SMI recently discharged from a psychiatric hospital	CTI: Time-limited intervention designed to enhance continuity of care during the transition from institution to community; long-term Assertive Community Treatment model to promote independent living through building community supports;	Control group: Both groups received a range of “usual” community-based services, depending on individual’s needs, preferences, and living situation; usually included various types of case management and clinical treatment.	Homelessness Probability of homeless days Health services use *Odds of psychiatric rehospitalization Continuity of care Family contact Mediation analysis examining whether changes in quality of family relationship mediated the association between the intervention and psychiatric rehospitalization outcomes	Health services use CTI lower odds of psychiatric rehospitalization, including after controlling for housing stability. CTI reduced psychiatric re-hospitalizations through improved satisfaction with family relations CTI greater perceived access to MH care No difference in stability of relationship with psychiatrist or case manager at 18 months but better at 9 months No difference in severity of instability of patient-MH service provider relationship
RCT	Schizophrenia (61%), schizoaffective disorder and other psychotic disorders					
N=150 patients						
Recruitment: 2002-2006						
Intervention: 9 months of intervention (in the CTI group) followed by 9 months of usual care only; Followup: every 6 weeks for 18-months			Services during transition to community living that will stay in place at end of intervention. Received usual community-based services and CTI. CTI delivered in 3 phases, each lasts approximately three months.			

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Herman et al., 2011 ³⁵ ; Tomita & Herman, 2012 ³⁶ ; Tomita & Herman, 2015 ³⁷ ; Tomita et al., 2014 ³⁸ (continued)			<p>Phase 1—transition to the community: focuses on providing intensive support and assessing resources that exist for transition from inpatient care to community providers.</p> <p>Phase 2—tryout: devoted to testing and adjusting systems of support developed during phase 1. By now, community providers will have assumed primary responsibility for delivering support and services, and CTI worker can focus on assessing degree to which support system is functioning as planned.</p> <p>Phase 3—transfer of care: focuses on completing transfer of responsibility to community resources that will provide long-term support.</p>			<p>Homelessness</p> <p>CTI group sig higher probability of no homeless days past 18 weeks.</p> <p>Quality of life</p> <p>CTI group greater frequency of family contact and greater improvement in satisfaction with family relations at 18 months.</p>

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Hinton, et al., 2005 ⁵⁶	Cambodian refugees	To assess the efficacy of culturally adapted CBT in a Cambodian refugee population, attending a community-based outpatient clinic providing specialized services to Cambodian refugees.	Culturally adapted CBT	Delayed culturally adapted CBT treatment	Health outcomes	
RCT					PTSD	Treatment group sig lower percentage with PTSD: 40% vs 100%
Randomized: N=40	Treatment-resistant PTSD and comorbid panic attacks			Both groups received supportive psychotherapy, once every other week, and medications consisting of a combination of an SSRI and the benzodiazepine clonazepam.	Generalized Anxiety Disorder	Treatment group sig lower percentage with Generalized Anxiety Disorder: 40% vs 100%
Intervention: 12 weekly sessions	Other characteristics:					
Followup: 12 weeks	Passed through Cambodian genocide (1975-1979) at age 6 or older					

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
<p>Interian et al., 2013²⁸</p> <p>RCT</p> <p>Community Mental Health Center in New Jersey, bilingual, mostly Spanish speaking patients</p> <p>Recruitment: July 2007 to December 2009</p> <p>Randomized N=50</p> <p>Intervention: META; assessment at time2: 5 weeks (after 2 sessions)and Time 3: 5 months (after 3)</p>	<p>Latino</p> <p>Major depressive disorder in past month or current dysthymia</p> <p>Other characteristics: current treatment plan includes antidepressants; over 90% foreign born</p>	<p>To assess whether usual care enhanced with motivational interviewing would improve antidepressant adherence and depression symptoms in a Latino treatment population with depression</p>	<p>Motivational Enhancement Therapy for Antidepressants (META) (individual counseling emphasizing empathy with patients' concerns about antidepressant treatment) plus usual care</p>	<p>Usual care: pharmacotherapy and some psychotherapy treatment.</p>	<p>Health service use</p> <p>Medication adherence measured through Medication Event Monitoring System (MEMSR)</p> <p>Health outcomes</p> <p>Change in depression measured with the Beck Depression Inventory-II (BDI-II).</p>	<p>META treatment group showed significantly higher antidepressant adherence than UC participants at time 2 (72% versus 42%, respectively) and time 3 (60% versus 34%), controlling for baseline adherence & attending ≥1 psychotherapy session</p> <p>Groups did not differ on change in mean BDI score.</p> <p>META group significantly more likely to achieve depression symptom remission at 5 months (OR = 7.0), controlling for baseline depression, attending ≥1 psychotherapy session, total adherence.</p>

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Kopelowicz et al., 2012 ⁴⁴	Hispanic (Mexican origin)	To determine whether a culturally adapted, multifamily group (MFG) therapy would increase medication adherence and decrease psychiatric hospitalizations. MFG treatment is a behavioral family treatment that combines psychoeducation and skills training.	Treatment as usual plus MFG; 2 arms with different approaches to MFG. Both MFG arms included: 1. 3 initial individual "joining" sessions with just family member, 2. Followed by a 1-day (6-hour) multifamily group "Survival Skills" educational workshop about the disease and its treatment, 3. Followed by MFG specific group sessions, twice monthly for 12 months 24 sessions)	Treatment as usual: medication and mental health services varied based on individual patient needs.	Access to health care Utilization: medication adherence using the Treatment Compliance Interview (both patient and key relative were interviewed) and pharmacy data; Inpatient hospitalizations determined based on computerized medical records	Medication adherence: No significant difference between groups in main effect of group X time at end of 1 year post-treatment followup.
RCT 6 inpatient psychiatry facilities and 2 outpatient community mental health facilities in the LA area.	Schizophrenia or schizoaffective disorder, diagnosed through SCID					Hospitalization: The MFG-A group had a longer time to first hospitalization and were less likely to have any hospitalization than MFG-S and treatment as usual groups
Recruitment: April 1, 2003 through January 31, 2007	Other characteristics: fluent Spanish-speaker (sessions are in Spanish), recent					
Randomized: N=178; Included in analysis: N=174	exacerbation of symptoms and did not take antipsychotic meds without medical authorization for 1 continuous week in the month prior to study enrollment, living with family of origin, 18-50 years of age		MFG-Standard (MFG-S): Sessions focus on understanding the disease, sharing experiences, identification of problem situations and learning 6-step problem solving approach.		Other health outcomes	MFG-A only analysis (post-hoc, non-RCT design, mediation): Increased adherence accounted for one-third of the overall effect of MFG-A reduced risk for any psychiatric hospitalization.
Length of intervention: 12 months					Psychiatric symptoms: assessment through Brief Psychiatric Rating scale	Psychiatric symptoms: all groups improved over time but no group X time effect.
Length of followup: 12 months (12 months post end of treatment)			MFG-Adherence (MFG-A): Sessions focus on specific obstacles to maintaining medication adherence guided by the Theory of Planned Behavior that has been used for treatment of other diseases			

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Kwong et al., 2013 ⁵⁹	Disparity group: Low-income Chinese Americans	To examine a collaborative care model to integrate culturally and linguistically relevant integrated MH and primary care to address depression and/or anxiety among low income, low literacy, immigrant Chinese American adults	Enhanced physician care with addition of care management, delivered at FQHC. Protocol included: use of PHQ-9 to screen patients for increased risk for MDD, active monitoring of symptoms of depression, suicidality, and patient adherence to treatment and outcomes; education about adherence to treatment regimens; proactive collaboration or consultation between PCPs and MH specialists. Providers received standardized training from MH specialists in use of chronic care model, depression diagnosis, evidence-	Enhanced physician care only delivered FQHC Physician and patient in enhanced physician care group jointly decided which treatment regimen they considered appropriate, and how often and when the patient would receive followup. PCP was responsible for all aspects of patients' treatment, including monitoring of patient progress, providing patients with educational materials, and monitoring self-management goals	Quality of health care Satisfaction with care Other health outcomes Depressive symptoms Mental health functioning SF12, quality of life Adherence to medication	Intervention group more visits Both groups reported significant reduction of depressive symptoms, anxiety and improved MH functioning from baseline to followup; although there was no significant difference between the two groups.

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post- Intervention Followup						
Kwong et al., 2013 ⁵⁹ (continued)			<p>based pharmacological treatment, and use of depression treatment algorithms.</p> <p>Self-management: set of bilingual (English and Chinese) self-help materials, all field tested for cultural relevancy and literacy appropriateness.</p> <p>At weeks 2, 6, and 12, seen by depression care manager, who coordinated depression care with PCP (reinforced PCP instructions, facilitated communication, reinforced physicians' treatment instructions; served as a communication bridge</p>			

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Lehman et al., 1997 ⁴⁸	Disparity group: Homeless	To evaluate the effectiveness of a program of Assertive Community Treatment to shift treatment away from emergency to outpatient services to improve symptoms, satisfaction, and health status.	Assertive community Treatment (ACT)	Usual care included a variety of community-based service organizations that provide case management services to the homeless in Baltimore. Scored similarly in relation to outreach orientation and vocational emphasis.	Health care service use:	Health care service use
RCT N=152; Baltimore, Maryland Recruited: 3/1991-9-1992 Followup: 2, 6, and 12-months	Receipt of social security disability income or 100% VA disability benefits because of a mental disorder or diagnoses of schizophrenia or schizoaffective disorder; Axis I mental disorder or extensive prior hospitalization history; history of mental disorder lasting during past year and inability to spend at least 75% of time in some gainful activity owing to a mental disorder.		For homeless: program model that integrated assertive, community-based clinical treatment with intensive case management and advocacy. Services included: 24 hour availability of 12 full-time staff, including social worker, psychiatrist, clinical case managers, consumer activists, family outreach worker. Each participant assigned to a mini team. In relation to comparison programs, ACT programs scored higher on scales of emergency access, longitudinality of care, team model, housing assistance, linking to entitlements, and referral advocacy.		Use of psychiatric inpatient hospitalization; emergency department visits; outpatient MH visits and general medical services Clinical Outcomes: <ul style="list-style-type: none"> • CSI symptom index • Self-rated health status Other health outcomes: <ul style="list-style-type: none"> • Number of days in stable community housing • Quality of Life 	ACT participants fewer psychiatric inpatient days; fewer emergency department visits; more outpatient MH visits; No difference general medical care service use (inpatient, outpatient, emergency department) Clinical outcomes At 12 months, ACT participants better clinical outcomes but no difference in self-rated health status ACT participants more days in stable community housing, Both groups improved in quality of life and life satisfaction.

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Lewis-Fernández, et al., 2013 ²⁹ Pre-post study N=50; New York City Recruited: 1/2003-3/2006 12 weekly sessions, 4 of which were enhanced sessions	Disparity group: First generation Latinos SMI: MDD Other characteristics: Spanish monolingual: 92%	To assess the effectiveness of motivational pharmacotherapy culturally adapted for a less-acculturated Latino MDD population.	Motivational pharmacotherapy, an adherence intervention adapted specifically for Latino patients in antidepressant medication therapy. It is delivered in 4 sessions by the treating psychiatrist and is based on motivational interviewing, administered adjunctively to standard antidepressant therapy. First visit was 37 minutes and subsequent 3 visits were 24 minutes	None	Improving adherence or response to treatment 17-item Hamilton Depression Scale total score of $\geq 50\%$, and remission as response plus a final 17-item Hamilton Depression Scale score < 8 <u>Other outcomes</u> Perceived quality of life using the Quality of Life Enjoyment and Satisfaction Questionnaire	Non-retention over 12 weeks: 20%; mean days: 74.2 of 84 Health outcomes (change over 12 weeks): <ul style="list-style-type: none">• HAMD17 sig improved• Sheehan Disability Scale sig improved• Quality of life measure sig improved

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Miranda et al., 2003 ³⁰ ; Revicki et al., 2005 ³¹	Disparity group: Low income, minority	Women Entering Care trial:	Pharmacotherapy group: antidepressant medication managed by a primary care nurse practitioner under the supervision of a board-certified psychiatrist, for up to 6 months.	Community referral group: educated about depression and its treatment and provided a referral to appropriate community providers. One-quarter declined referral	Adherence or response to treatment:	83% of women referred to community referral attended no sessions; among those randomized to medication: 75% completed 9+ weeks, among those randomized to CBT: 53% received 4 or more sessions
RCT	SMI: MDD	Comparative effectiveness of treatments for low-income women with MDD: CBT vs antidepressant medication vs referral to community health services	CBT group: therapy from psychotherapists supervised by a licensed clinical psychologist, 8 weekly sessions (individual or group administration); CBT could be extended an additional 8 weeks if patient continued to meet criteria for MDD.		<ul style="list-style-type: none"> Symptom reduction Depression remission Medication adherence and CBT attendance 	At 6 months: pharmacotherapy and CBT resulted in greater improvement in depression outcomes than community referral. Results did not differ by race/ethnicity.
Maryland counties near DC, Arlington and Alexandria, VA	Other characteristics: Women, primarily Hispanic and African American (96%)		All written materials available in Spanish for Spanish-speaking women, clinicians experienced treating this population, Education sessions available to those reluctant to receive treatment, funds for transportation and child care provided			Also, both groups better social functioning; instrumental role functioning better in pharmacotherapy group only
Randomized: N=267						At 12 months, both pharmacotherapy and CBT groups had greater number of depression free days and both had higher outpatient costs per depression free day
Study participants were assessed at 3, 6 and 12 months						

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Moreno et al., 2012 ³²	Disparity group: Hispanic	Among Hispanic patients with depression, to compare the effectiveness of depression treatment provided by a psychiatrist through internet videoconferencing (webcam intervention) and treatment as usual by a primary care provider	Webcam participants met remotely with a bilingual psychiatrist monthly for six months, using measurement based medication management following the Texas Medication Algorithm Project (TMAP), psychoeducation, and other brief eclectic interventions, as appropriate; study psychiatrists also available for case discussions	Treatment-as-usual: customary care from primary care providers for six months, using guidelines from AHRQ	Health outcomes Clinician administered Montgomery-Asberg Depression Rating Scale (MADRS) Self-rated Patient Health Questionnaire, 9 item (PHQ-9) Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q) Self-rated Sheehan Disability Scale (SDS)	Intervention sig greater improvement in MADRS, PHQ-9, Q-LES-Q, and SDS Telepsychiatry delivered through the internet with commercially available technology was both effective and acceptable
RCT	SMI: Depression,					
Community Health Center						
Study conducted between 7/2008-6/2010						
N=167						
6 months with measurements at baseline, 3 months, and 6 months						

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
O'Mahen et al., 2013 ³³	Disparity group: Low SES	To evaluate the comparative effectiveness of modified CBT and treatment of usual among low-income perinatal women with MDD.	Modified CBT: up to twelve 50-minute individual sessions, adapted for the perinatal period. The course of mCBT included an initial engagement session that included motivational interviewing, and sessions that included behavioral activation, cognitive restructuring, and interpersonal support.	Treatment as usual: feedback about depression status post-regular care, psychoeducational materials about perinatal depression, and local referral information about psychotherapy and case management. Risk reassessed at each interview	Adherence or response to treatment: <ul style="list-style-type: none"> • Session attendance • Symptom reduction Quality of care: <ul style="list-style-type: none"> • Treatment satisfaction • Content applicability 	Women who received mCBT intervention reported greater improvement in depressive symptoms at the conclusion of treatment and 3 months posttreatment.
Pilot RCT	SMI: MDD					
Obstetrics clinics that primarily serve low income women	Other characteristics: Pregnant women primarily recruited from clinics serving low-income women		Active outreach to women who cancelled or missed therapy appointments, including multiple reminder phone calls and flexible appointment rescheduling.			
Randomized: N=55						
Outcomes were assessed posttreatment (16 weeks after randomization) and 3 months posttreatment						Satisfaction with mCBT correlated with the perceived applicability of the material.

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Patterson et al., 2005 ⁴⁵	Disparity group: Latino	To pilot test a manualized cognitive behavioral intervention based on social cognitive theory to improve the functioning of Latino outpatients with schizophrenia who were 40 years of age or older.	Program for Training and Development of Skills in Latinos (PEDAL): The intervention focuses on improving 6 areas of everyday functioning: (a) medication management, (b) social skills, (c) communication skills, (d) organization and planning, (e) transportation, and (f) financial management. These 6 functional skill areas were taught in 24 semiweekly (twice a week), 120-minute group sessions. Group leaders were bilingual and bicultural and held either a master's or doctorate-level degree. It was adapted for Latino patients by (1) performing direct translation; (2) integrating culture—specific icons and idioms in the materials; and (3) basing format, content, and treatment goals on Mexican values and cultural scripts.	Time equivalent friendly support group	Access to care: Number of sessions Functional outcomes Change in functional skills using three indicators: 1) Everyday functioning: UCSD Performance-Based Skills Assessment (UPSA) 2) Medication Management Ability Assessment (MMAA) 3) Social Skills Performance Assessment (SSPA) Health Outcomes: Psychopathologic symptomatology (Positive and Negative Symptom Scale [PANSS]) Quality of life: Quality of Well-Being Scale	Number of sessions attended: no sig difference between groups Functional Outcomes: UPSA: PEDAL group sig better at end of treatment but not at 6 or 12 month followup. MMAA: no difference between groups at end of treatment or 6 month followup but PEDAL better at 12 months. SSPA: No difference at end of treatment, 6 or 12 month followup. Health Outcomes: PANSS: no difference between groups at end of treatment or 6 month followup but PEDAL better at 12 months. Quality of well-being scale: no difference at end of treatment, 6 or 12 month followup.
Trial randomized by clinic	SMI: Schizophrenia or schizoaffective					
3 clinics in San Diego County						
N=29						
24 twice weekly sessions (end of intervention and 6 and 12 month followup)						

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Rosenheck et al., 1998 ⁵⁰ Rosenheck et al., 2002 ⁵¹ Lam & Rosenheck, 1999; ⁵² Rothbard et al., 2004 ⁵³ Cohort study N=1832 (first year), N=7,055 (4 cohorts); Medicaid eligible (N=600) 18 sites with approximately 100 participants each Enrollment: 5/1994-7/1995 Followup: 3 and 12 months	Disparity group: Homeless Major depression, schizophrenia, other psychoses, personality disorder, anxiety disorder, bipolar disorder	To evaluate the effectiveness of a demonstration project, Access to Community Care and Effective Services and Supports (ACCESS) Program providing greater service delivery integration for the homeless with SMI	Access to Community Care and Effective Services and Supports (ACCESS) Program, a 5-year, 18 site demonstration program to assess whether integrated systems of service delivery enhance the use of services, outreach, and the quality of life of the homeless with SMI. Sites across the country provided outreach and intensive case management to homeless with SMI. Each site provided with funding to: create outreach teams to make contact with untreated homeless with SMI and to facilitate their involvement in more intensive services and to provide intensive	Comparison sites: did not receive funds for system integration.	Quality of health care Proportions of clients who reported having a primary case manager relationship at either three or at 12 months Clinical outcomes Mental health symptoms Achievement of independent housing Quality of Life	Treatment by consumer providers was associated with equivalent client outcomes to treatment by other case managers. ACCESS improved access to housing services 3 months after program entry and, through these services, to independent housing after 12 months, but not other services; no difference between system integration sites and comparison sites. Improvement on most outcome indicators for those clients contacted through street outreach who were successfully engaged in treatment was equal to those contacted through health and social service agencies, at 3 months.

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Rosenheck et al., 1998 ⁵⁰ Rosenheck et al., 2002 ⁵¹ Lam & Rosenheck, 1999; ⁵² Rothbard et al., 2004 ⁵³ (continued)			case management teams to provide comprehensive services.			Among Medicaid participants in Pennsylvania, likelihood and amount of psychiatric outpatient service use increased during period from before to after the program, likelihood of inpatient psychiatric use did not change but days declined.
Shern et al., 1997 ⁵⁴ RCT for each project, results here combined and presented as overall cohorts; 4 cities: Baltimore, Boston, San Diego, New York City N=894 Followup: 12 to 24 months	Disparity group: Homeless Participants identified as SMI population (90% with psychotic disorder or affective disorder)	To describe the McKinney research demonstration projects, testing different housing, support, and rehabilitative services with the goal of reducing homelessness among individuals with SMI.	McKinney research demonstration projects: different case management models at different sites that included rehabilitation, Assertive Community Treatment and intensive case management. All models used assertive outreach and case management teams.	Usual care was compared, based on 3 sites in 2 cities. These interventions differed in relation to time and intensity of services	Other health outcomes Housing stability Primary housing setting Change in proportion housed	Increase in attainment of community housing by active intervention participants: 47.5% Stable housing (residing in community housing) based on interventions in all but New York City intervention: 78% with no difference across experimental groups.

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Shern et al., 2000 ⁵⁵ RCT N=168 Followup: every 6 months for up to 24 months	Disparity group: Homeless Meeting New York State's definition of serious and persistent mental illness; includes evidence of mental illness combined with serious disability resulting from mental illness.	To test a psychiatric rehabilitation approach for organizing and delivering services to street-dwelling persons with serious mental illness	Choices: outreach and engagement to foster relationship with staff; invitation to attend and join the Choices Center, a low demand environment available during the day for food, showers, assistance with obtaining support services, socializing; respite housing in informal shelters or YMCA; and in-community and on-site rehabilitation to assist in finding and maintaining community housing. Choices similar to an intensive case management program	Control group: told of availability of usual care; including array of homelessness and specialty MH services in New York City.	Service use: Emergency department, outpatient, inpatient, day program Psychological status Housing outcomes Shelter use Community housing use Quality of life Life satisfaction	Health service use: No difference emergency department, outpatient or inpatient services; greater day program use Psychological status Choices greater reduction in anxiety, depression, and thought disturbances Housing outcomes Choices greater use of shelters and community housing Quality of life Choices greater improvement in life satisfaction

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Shin and Lukens, 2002 ⁴⁶	Disparity group: Korean American	To test a psychoeducational intervention designed specifically for Korean patients to improve treatment outcomes for Korean patients with schizophrenia	10 weekly 90-minute group psychoeducational sessions conducted by a Korean-speaking psychiatric social worker that included a variety of educational techniques designed to enhance participants' learning and to maintain their attention, integrating the discussion of traditional Korean disease concepts.	10 weekly 45 minute individual supportive therapy conducted in Korean by a master's student.	Health outcomes Psychiatric symptoms (Brief Psychiatric Rating Scale [BPRS]) Other outcomes Stigma (Link's Stigma-devaluation scale) Coping Skills (Family Crisis Oriented Personal Evaluation Scales)	BPRS: Interventions group sig greater decrease over time in psychiatric symptoms (primarily based on positive symptom improvement) Stigma: Intervention group greater change over time in assigning less stigma to mental illness than the control group. Coping skills: Intervention group coping skills better at end of treatment than control group.
RCT	SMI: Schizophrenia, schizoaffective disorder, or schizophreniform disorder		Also, 10 weekly 45-minute individual supportive therapy conducted in Korean by a master's student.			
Outpatient mental health clinic in Queens, New York City, between 1/2000-3/2000						
N=48						
Length of intervention: 10 weeks						

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Susser et al., 1997 ³⁹	Disparity group: Homeless	To examine the comparative effectiveness of the Critical Time Intervention (CTI), enhanced continuity of care for individuals with SMI being discharged from institutions to community living vs. usual care at deinstitutionalization	CTI: Time-limited intervention, 9 months of CTI + usual services followed by 9 months of just usual services	Usual Services:	Other health outcomes	CTI group better: average number of homeless nights over 18 months (32 vs. 90 days), likelihood of homeless at 18 months; difference widened during the course of the study.
Herman et al., 2000 ⁴⁰ , Jones, 2003 ⁴¹ , Jones, 1994 ⁴²	SMI: Schizophrenia and other psychotic disorders		Clinical team devised Individualized plan for the transfer of care to other formal and informal supports; identified one or two specific areas of potential discontinuity related to the risk of homelessness for this individual, in which intervention was likely to be effective in preventing homelessness.	Referral to MH and rehabilitation programs that were generally of high quality. Following the usual model of discharge from an institution, staff of the on-site shelter psychiatry program available to these agencies for consultation on request but did not actively seek a role in the patient's care after discharge.	Homelessness	
RCT	Other characteristics:				Symptom severity: positive symptoms, negative symptoms, and general psychopathology	CTI associated with greater decrease in negative symptoms at 6-month followup, reflecting modest clinical improvement; no significant difference positive or general psychopathology symptoms
Randomized: N=96	Men; had completed on-site treatment prior to entering the program, had been homeless for an extended period of time, being transferred from institutions to the community; many had other comorbid conditions				Housing	
Discharged to community: 1991-1993					Costs (shelter costs, criminal justice costs)	
Length of intervention: 18-months					Cost-effectiveness	
			Each participant assigned to a "CTI worker" to implement the plan. Worker did not need to have a professional degree but	Men referred as needed to community agencies for substance abuse, general health, income support, education, legal		Cost over 18 months: CTI group: \$52, 374, usual care: \$51,649 including acute care services, outpatient services, housing, shelter, criminal justice and transfer payments. CTI cost \$152 per nonhomeless night

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post- Intervention Followup						
Susser et al., 1997 ³⁹			did need to have experience working with this population and enough “street smarts” to work with these men in the community.	advocacy, and other services.		
Herman et al., 2000 ⁴⁰ ; Jones, 2003 ⁴¹ ; Jones, 1994 ⁴²						
(continued)			A psychiatrist or other MH professional supervised CTI worker. Goal was strengthening long-term ties and determining key issues that would put patient at risk. CTI worker provided support for both the man and those who could assist him in treatment, such as: visiting the family home or community residence, being present at appointments, and giving advice in crises.			

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Susser et al., 1997 ³⁹ Herman et al., 2000 ⁴⁰ , Jones, 2003 ⁴¹ , Jones, 1994 ⁴² (continued)			During first 2 weeks after discharge, CTI worker spent time with patient in the community observing his physical and social surroundings and daily habits. Subsequent support was individually tailored.			
Tan et al., 2013 ⁵⁷ Single group pre-post pilot study N=34 Length of intervention: 6 weeks Followup: 6 weeks post-treatment	Disparity group: Rural SMI: PTSD, MDD, or both Other characteristics: Female veterans residing in two rural Texas CBOCs Chronic pain condition	To improve access to care for pain to women veterans living in rural areas through mobile biofeedback device, local support group for women, and therapy/education delivered through telemedicine	Biofeedback training using a handheld biofeedback device (Stress Eraser) with weekly clinical video-teleconference support sessions. The first session was a face-to-face group orientation to the project that included biofeedback device training. Subsequent sessions included clinical video-teleconference group-based treatment, education, pain-coping skills training, and support elements.	Pre-post design: comparison group	Adherence or response to treatment: Depression and/or PTSD symptom reduction Other health outcomes: <ul style="list-style-type: none"> Pain intensity, unpleasantness, and interference Sleep disturbance Quality of care: <ul style="list-style-type: none"> Treatment acceptability Satisfaction with group care for women vets 	The clinical protocol was acceptable and feasible and resulted in some improved pain measures, depression, and PTSD symptom outcomes. No improvement in pain intensity.

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Telles et al., 1995 ⁴⁷ RCT Los Angeles, public mental health clinics Randomized: N=40 Length of intervention: 1 year; No followup beyond the end of the intervention	Disparity group: Hispanic (Mexican, Guatemalan or Salvadoran descent) SMI: Schizophrenia Other characteristics: 18-55 years of age, living in the community with a family member	Comparative effectiveness and cross-cultural applicability of behavioral family management and standard case management in preventing exacerbation of symptoms and relapse in Hispanics with schizophrenia.	Behavioral family management intervention: Case management weekly by psychosocial therapists (licensed bilingual bicultural clinical social workers). Assessment weekly or biweekly by research psychiatrists to attain clinical stability with optimal neuroleptic dosage Seen in clinical setting weekly sessions for first 6 months; every 2 weeks for next 3 months; and monthly for last 3 months Behavioral Family Management: a highly structured behavioral intervention package	Case management: Case management weekly by psychosocial therapists (licensed bilingual bicultural clinical social workers). Assessed weekly or biweekly by research psychiatrists to attain clinical stability with optimal neuroleptic dosage Seen in clinical setting weekly sessions for first 6 months; every 2 weeks for next 3 months; and monthly for last 3 months	Access to health care Medication compliance Health outcomes Prevention of relapse Reduction of psychotic exacerbations	Survival analyses: overall, exacerbation results worse in behavioral family management group; among less acculturated patients, behavioral family management was significantly related to greater risk of exacerbation of symptoms. Among more acculturated patients, risk of exacerbation predicted by medication compliance but not by type of intervention. In analyses of symptom severity and functional status at 1-year: level of patient acculturation significantly related to measures of treatment outcome

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Telles et al., 1995 ⁴⁷ (continued)			targeted to the family unit. Three separate modules, introduced sequentially and later integrated: (i) patient family education about schizophrenia; (ii) training in communication skills; and (iii) training in problem-solving skills, to help the family to think of solutions and apply them Socioculturally appropriate translations and adaptations of educational and instructional materials were made on the basis of earlier pilot study and by consensus among this study's bicultural clinicians.	Case management involves goal-oriented supportive psychotherapy sessions with only the identified patient and is directed towards enhancing functioning in the community. Family members, though sometimes contacted, were not involved in treatment sessions		Medication compliance did not differ between the two groups; however, it was highly confounded with level of patient acculturation

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Tsai et al., 2013 ³⁴ N=137 San Francisco, California Recruitment: 7/2002-2/2008 Intervention: 24-weeks, 12-week followup period after intervention	Disparity group: homeless Depression: (major, minor, or dysthymia) Other characteristics: HIV+	To evaluate directly observed therapy of fluoxetine to homeless individuals with MDD.	Intervention: Directly observed therapy (DOT) with fluoxetine Fluoxetine treatment directly observed for 24 weeks, introduced in 3 phases of gradually increasing independence: (1) 20mg DOT each weekday and self-administered on weekends, for 2 weeks; (2) 90mg fluoxetine DOT weekly, for 22 weeks; and (3) 90mg self-administered weekly, for 12 weeks. Psychiatrist met with participants weekly for first month, every 2 weeks for second month, and monthly thereafter. At each visit, psychiatrist conducted a thorough psychiatric interview and mental status exam and inquired about treatment response and possible adverse side effects.	Referral only: received an explanation of their diagnosis and advised to seek treatment at a public MH clinic that specialized in the care of HIV-positive persons, located 0.5 mile away along a major public transportation corridor.	Health outcomes Depression Secondary HIV outcomes (antiretroviral uptake) Adherence: antiretroviral adherence measured by unannounced pill count, and HIV-1 RNA viral suppression	Health outcomes Intervention reduced depression symptom severity, and increased response and remission. Adherence No difference in in ART adherence or probability of viral suppression

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Uebelacker et al., 2011 ⁷⁸	Disparity group: Latino	To assess the feasibility, acceptability, and preliminary efficacy of adapting telephone depression care management for Latino Medicaid health plan members with depression.	Depression Health Enhancement for Latino Patients (D-HELP): Telephone depression care management + treatment as usual (mental health care through a primary care provider and taking antidepressant medication)	Treatment as usual (mental health care through a primary care provider and taking antidepressant medication)	<ul style="list-style-type: none"> Access to care <ul style="list-style-type: none"> Number of outpatient visits Adherence <ul style="list-style-type: none"> Number of days with antidepressant medication Quality of care <ul style="list-style-type: none"> Modified version of the Client Satisfaction Questionnaire (CSQ) used to assess satisfaction with depression treatment 	<ul style="list-style-type: none"> Access to care <ul style="list-style-type: none"> No difference in number of visits Adherence to medication <ul style="list-style-type: none"> No difference between groups in medication use Quality of care <ul style="list-style-type: none"> CSQ: no difference between groups in change over time Health outcome <ul style="list-style-type: none"> QIDS and CES-D no difference between groups in change over time Functional status <ul style="list-style-type: none"> No difference between groups in any WHO-DAS domains
RCT Recruitment: 5/2007-5/2008 Medicaid HMO N=38 12 weeks 6 & 12 week assessments	SMI: major depression, minor depression, or dysthymia in the past year, or current elevated depressive symptoms Other characteristics: currently taking an antidepressant, members of a Medicaid HMO					

Citation						
Design						
Number of Participants	Disparity Group	Study Goal	Intervention	Comparator	Outcomes	Results
Length of Intervention	SMI Diagnosis					
Length of Post-Intervention Followup						
Uebelacker et al., 2011 ⁷⁸					Health outcome	
(continued)					<ul style="list-style-type: none"> Depression severity measured through quick inventory of depression symptoms (QIDS) (Clinician version) and the Center for epidemiological studies-depression scale (CES-D) 	
					Functional status	
					World Health Organization Disability Assessment Schedule (WHO-DAS): assessed domains of functioning, including social, work, and household	

CBOCS = community-based outpatient clinics; CBT = cognitive behavioral therapy; CHC = community health center; CMCH = community mental health center; CPT = cognitive processing therapy; FQHC = federally qualified community health center; MDD = major depressive disorder; MH = mental health; MINI=Mini International Neuropsychiatric Interview; PCP = primary care provider; PTSD = posttraumatic stress disorder; SCID = Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders*, 4th Edition; VA = Veteran's Administration.